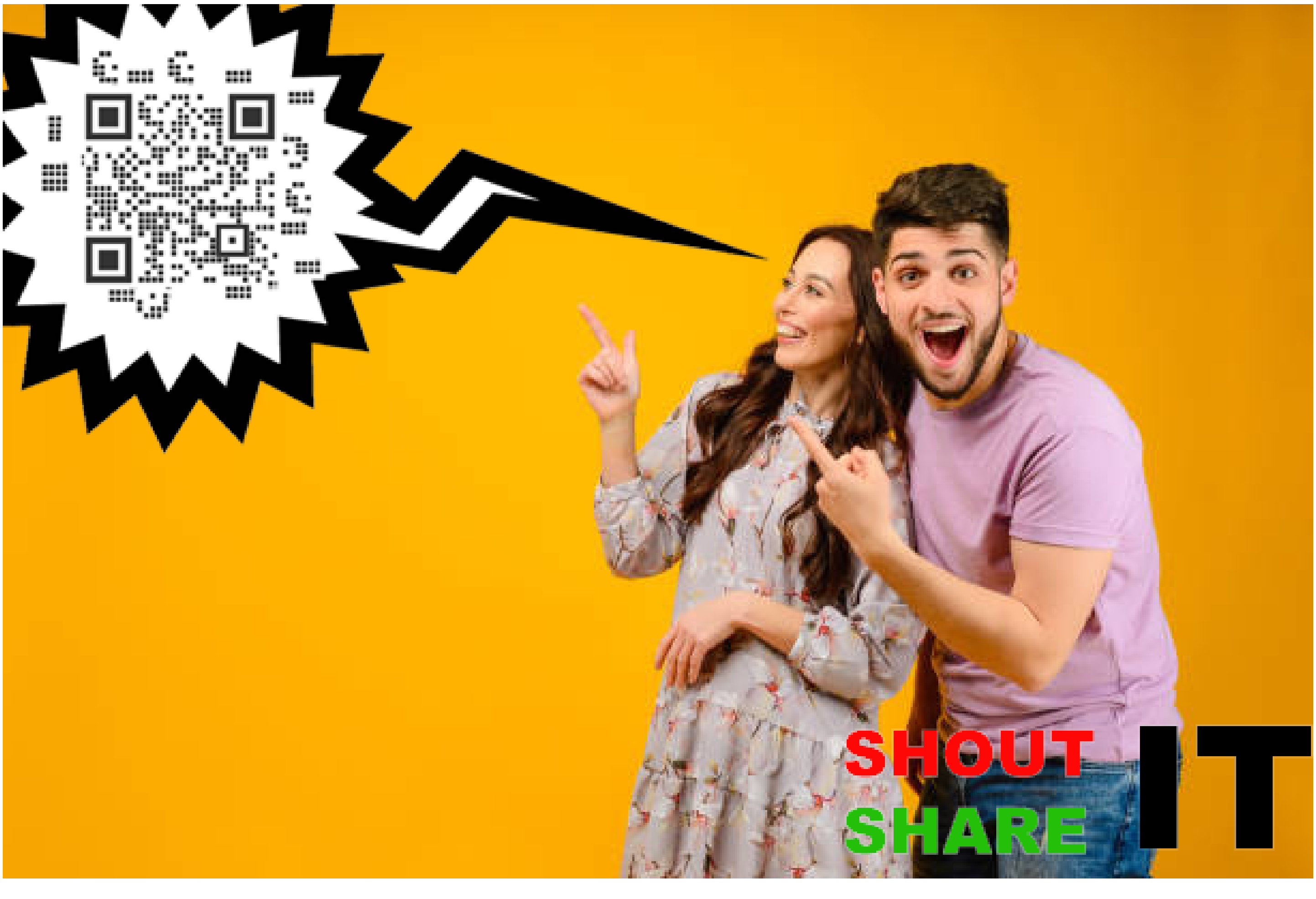

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JOURNAL

of the

Straits Branch

of the

Royal Asiatic Society

For the Year 1922.

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1922.

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STRAITS BRANCH
ROYAL ASIATIC SOCIETY.

No. 85

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[No. 85]

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of the

Straits Branch

of the

Royal Asiatic Society

March 1922.

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SINGAPORE:
PRINTED AT THE METHODIST PUBLISHING HOUSE,
1922.

THE
STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

Patron.

H. E. Sir Laurence Guillemard, K.C.B., Governor of the Straits Settlements and High Commissioner for the Malay States.

Council for 1922.

The Hon. Mr. W. G. Maxwell, C.M.G.	*President.*
The Hon. Sir J. W. Murison and Mr. H. Robinson.	*Vice-Presidents for the S.S.*
Mr. H. C. Robinson and Mr. J. B. Scrivenor.	*Vice-Presidents for the F.M.S.*
Mr. J. L. Humphreys and Mr. A. W. Hamilton.	*Vice-Presidents for the Unfederated States.*
Mr. C. Bazell.	*Hon. Treasurer.*
Major J. C. Moulton, O.B.E.	*Hon. Secretary.*
Mr. J. Johnston.	*Hon. Librarian.*
Mr. I. H. Burkill, Mr. A. G. Bratton, Mr. C. L. Collenette and Mr. B. Nunn.	*Council.*

PROCEEDINGS

OF THE

Annual General Meeting.

The Annual General Meeting was held at the Society's rooms 5 p.m. on Friday, 10th February 1922.

PRESENT: Dr. R. O. Winstedt (Vice-President for Singapore) in the chair and 26 other members.

1. The Minutes of the Annual General Meeting of 11th February 1921 were confirmed.

2. The Minutes of the General Meeting held 1st July 1921 were read and confirmed.

3. The Annual Report and Statement of Payments and Receipts were adopted on the motion of Mr. H. C. Robinson, seconded by Mr. C. L. Collenette.

4. The Chairman proposed for confirmation, and Mr. Burkill seconded, that Rule 1 be rescinded and the following substituted:—

> "The name of the Society shall be 'The Malayan Branch, Royal Asiatic Society'."
>
> This was confirmed unanimously; the change in name to take effect from 1st January 1923.

5. The Chairman proposed for confirmation, and Major Moulton seconded, that Rule 8 be amended as to the first four lines by the substitution of the following words:—

> "The Officers of the Society shall be:—
>
> "A President,
>
> "Vice-Presidents not exceeding six, ordinarily two each from (i) the Straits Settlements, (ii) the F. M. S., and (iii) the Unfederated or other Protected States, although this allocation shall in no way be binding on the electors."

The Resolution was confirmed with one dissentient.

6. H. H. the Sultan of Johore K.C.M.G., K.B.E. was elected an Honorary Member.

7. The election of Officers and Members of the Council for the current year resulted as follows:—

President - - - -	The Hon. Mr. W. G. Maxwell, C.M.G.
Vice-Presidents for the S.S. -	The Hon. Sir J. W. Murison and Mr. H. Robinson.
Vice-Presidents for the F.M.S.	Mr. H. C. Robinson and Mr. J. B. Scrivenor.
Vice-Presidents for the U.M.S.	Mr. J. L. Humphreys and Mr. A. W. Hamilton.
Hon. Treasurer - - -	Mr. C. Bazell.
Hon. Secretary - - -	Major J. C. Moulton, O.B.E.
Hon. Librarian - - -	Mr. J. Johnston.
Council - - - -	Mr. I. H. Burkill, Mr. A. G. Bratton, Mr. C. L. Collenette and Mr. B. Nunn.

8. Votes of thanks to Mr. See Tiong Wah for auditing the Society's accounts, to Dr. Lim Boon Keng, O.B.E. for his services on the Council, and to the retiring Council, were passed.

9. The Chairman then gave an interesting lecture on the Antiquities of Malaya, after which Mr. Robinson proposed, and Mr. Amery seconded, a hearty vote of thanks to the lecturer, at the same time expressing a hope that the paper would be printed in the Society's Journal.

Annual Dinner.

By kind permission of the Committee of the Singapore Club a dinner was held at that Club on Friday 10th February 1922 at 8.15 p.m.

H. E. the Governor, as Patron of the Society, accompanied by Mr. R. B. Osborne, Private Secretary, and Mr. Foulger A.D.C. was present as the guest of the evening. Sir. J. W. Murison, the retiring President, took the chair. Covers were laid for 35. Besides those mentioned, the following Members were present:— Messrs. C. L. Collenette, H. C. Robinson, W. J. Cullen, Seah Liang Seah, Seah Eng Tong, J. O'May, A. F. Richards, I. H. Burkill, A. Cavendish, W. Lowther Kemp, Drs. A. L. Hoops, F. W. Foxworthy and R. O. Winstedt, Messrs. H. Robinson, E. T. Williams, B. Nunn, C. E. Wurtzburg, J. I. Miller, D. Santry, C. Bazell, W. P. Plummer, J. R. Lynch, A. J. Amery, F. G. Bourne, L. J. Hayes, H. D. Mundell, A. G. Bratton, J. C. Moulton and three guests.

After the usual loyal toast the Chairman proposed the health of H. E. the Governor, who responded in a happy speach emphasizing the importance of the occasion due to the change in the Society's name inaugurated that very day. H. E. referred in eulogistic terms to the valuable work done for the Society by the two Vice-Presidents Dr. Winstedt and Mr. Robinson. In conclusion he gave a two-fold toast: " to the *Straits* Branch, Royal Asiatic Society, *Vale;* to the *Malayan* Branch, Royal Asiatic Society, *Ave,"* and to the latter he added *"Floreat, florebit."*

Dr. Winstedt and Mr. Robinson replied on behalf of the Society.

The Company then adjourned to the billiard and card rooms where the remainder of the evening passed pleasantly.

Annual Report

of the

Straits Branch, Royal Asiatic Society,

for 1921.

Membership. The membership of the Society at the close of the year stands at 463, as compared with a total of 329 at the end of 1920. There are 14 Honorary Members, 4 Corresponding Members and 445 Ordinary Members.

During the year 153 new members were elected by the Council. This is more than double the highest number of new members ever added in any one year (viz. 73 in 1910), and nearly treble the number who joined during 1920. The Council regard this sign of wider interest in the Society as highly satisfactory and reflecting great credit on several energetic members who have been so successful in interesting many in the work of the Society. In addition to many new Members from the Straits Settlements and the F. M. S., several resident in British North Borneo, Sarawak and the Unfederated States (particularly Kedah) joined the Society.

The names of the new members elected during the year are:—

Honorary Members.

Prof. Dr. Renward Brandstetter
The Sultan of Perak, K.C.M.G.
Prof. Dr. Snouck-Hurgronje
Dr. Ph. Van Ronkel

Ordinary Members.

Dr. R. Allen, B.SC.
Mr. W. H. R. Allen
Capt. E. V. Andreini
Mr. K. W. H. Austen
Enku Abdul Aziz
Mr. H. Ball
Mr. S. H. Ball
Mr. J. R. Barnes
Mr. G. E. Baughan
Mr. H. Beard
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Mr. W. C. B. Bell
Major E. V. Benjamin, M.C.
Major K. Black
Rev. R. Blasdell
Mr. R. Boyd
Mr. A. G. Bratton
Mr. T. W. Browne
Mr. H. M. Butterfield
Mr. F. M. Campbell
Mr. A. Cavendish
Mr. F. N. Chasen
Mr. E. Cheers
Mr. H. T. Clark
Mr. G. E. Clayton
Mrs. J. J. Connell
Mr. A. C. Cooney
Mr. N. Coulson
Mr. J. C. Cowap
Miss Craddell
Mr. Gordon Cranna
Mr. H. B. Crocker

Mr. C. D. Adams
Mr. L. A. Allen
Mr. W. G. Cullen
Mr. A. W. Davidson
Mr. S. E. Dennys
Mr. G. B. Deshmukh
Mr. P. L. Dickson
Mr. F. W. Douglas
Mr. A. M. Dryburgh
Capt. B. J. Eaton, O.B.E.
Mr. S. J. Edwards
Dr. E. A. Elder
Mr. H. A. Forrer
Mr. R. G. Foulger
Hon. Mr. F. W. Fraser
Mr. L. B. Gibson
Mr. W. Graham
Mr. C. S. Griffiths
Mr. W. A. C. Haines
Mr. G. L. Ham
Mr. W. P. Handover
Mr. J. A. H. Hardie
Dr. H. H. Hart, B.A.
Mr. R. N. Harvey
Capt. N. M. Hashim
Mr. G. Hawkins
Mr. L. J. Hayes
Mr. M. R. Henderson
Mr. C. Hewetson
Mr. M. R. Holgate
Mr. W. Holleman
Dr. A. L. Hoops
Dr. P. S. Hunter
Mr. G. C. Irving
Dato Ismail bin Bachok, D.P.M.J.
Mr. F. B. Ivens
Mr. F. E. Ivery
Dr. F. V. Jacques
Inche On bin Jaffar
Ahmad Jalaludin
Mr. L. A. Jermyn
Mr. M. M. Joy
Tengku Kassim bin Sultan
Abdul Hamid Halinshah
Mr. J. Kellie
Mr. G. M. Kidd
Mr. C. S. Kinder
Mr. T. Kitching
Mr. E. R. Koek
Rev. J. Romanis Lee
Mr. L. G. Lee
Mr. N. L. Lindon
Capt. C. L. Lowe
Mr. J. R. Lynch
Mr. I. C. Macmillan
Mr. E. E. Madge
Mr. A. H. Malet
Mr. H. L. Manchester
Mr. N. F. H. Mather
Mr. C. N. Maxwell
Mr. D. McLeod
Mr. J. I. Miller
Commander J. F. Mills, R.N., I.S.O.
Mr. R. M. Moffat
Said Mohamed bin Said Ali Idid
Mr. S. Morgan
Dr. J. R. Kay Mouat
Mr. C. R. Nagalingam
Mr. S. J. Nathan
Major J. B. Neilson, M.C.
Mr. Ong Thye Ghee
Mr. H. A. L. Orchard
Mr. R. B. Osborne, M.C.
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Rev. W. Peach
Mr. J. Pedlow
Mr. H. M. Pendlebury
Mr. W. P. Plummer
Mr. P. N. Ponnambalam
Mr. C. W. H. Price
Major Stamford Raffles, O.B.E.
Mr. H. C. Reis
Mr. Marcus Rex
Major F. W. Richards, D.S.O., M.C.
Mr. E. A. Ross
Mr. J. A. V. Ruston
Major E. O. Rutter
Inche Mohamed Salleh bin Ali, S.M.J.
Major W. R. Sanguinetti, O.B.E., M.C.
Mr. V. Sauchelli
Dr. R. Schider
Mr. Duncombe Sear
Mohamed Sheriff bin Osman
Mr. P. Simpson
Mr. H. S. Sircom
Mr. W. F. de V. Skrine
Mr. W. Smart

Capt. S. R. Smith, O.B.E.
Dr. G. T. Foster Smith
Mr. F. W. South
Mr. W. E. Speers
Mr. G. Beresford Stooke
Mr. de la M. Stowell
Mr. W. H. Stubington
Mr. H. Sutcliffe
Mr. E. R. Taylor
Mr. A. K. à Beckett Terrell
Mr. L. A. Thomas
Mr. H. P. Trewin
Lt. Col. J. H. Tyte
Mr. W. D. Visser
Mr. F. W. Wade
Mr. B. S. Walton
Major G. R. H. Webb, O.B.E.
Mr. E. S. Willbourne
Mr. E. T. Williams
Mr. R. M. Williams
Dr. W. B. Wilson, M.C.
Mr. C. E. Wurtzburg, M.C.

The Rev. Dr. W. Shellabear was elected an Honorary Member of the Society. He joined the Society in 1894, served for several years on the Council and was President from 1914-15.

The death of the Rev. R. G. Lawes, an Honorary Member since 1883 was reported during the year.

Among Ordinary Members the Society lost 15 by resignation during the year, of whom 6 were removed under Rule 6.

Council. Mr. C. Boden Kloss, Vice-President for the F. M. S. went on leave in June; the Hon. Mr. W. G. Maxwell, C.M.G. was co-opted in his place. The Hon. Dr. Lim Boon Keng, O.B.E. and Mr. J. E. Nathan left the country during the latter half of the year; Messrs. B. Nunn and A. G. Bratton were co-opted to fill their places on the Council.

General Meetings. The Annual General Meeting was held on the 11th February followed by a dinner at the Singapore Club attended by 30 Members and their friends. It is hoped to make this a regular feature of the Annual meeting.

The General Meeting held on the 1st July, was noteworthy for two reasons:

In the first place it marked a first attempt to revive the holding of meetings for the purpose of reading and discussing papers. These meetings were held frequently in the early days of the Society: thus 9 general meetings were held and 22 papers read during the first year of the Society (1878), followed by 6 meetings and 8 papers in 1879. But in 1881 only one general meeting was held: the difficulty of forming a quorum proved too great. No mention is made in the Annual Reports of the Society of any similar meetings having been held since, with the exception of one in June 1890. At this "revival" meeting in July, 1921, Mr. C. N. Maxwell contributed a paper on Malayan Fishes, and Mr. Collenette one on the enemies of butterflies. Although the majority of the Members reside away from Singapore, it is hoped to arrange more meetings of this nature from time to time, as the experiment was evidently appreciated.

Change of Name. At the July meeting the important question of changing the Society's name was definitely put to the vote. In April a circular was sent to all members mentioning the proposal to change the name of the Society from the "*Straits Branch*" to the "*Malayan Branch* of the Royal Asiatic Society." Arguments for and against were briefly discussed; members were invited to reply by postcard stating whether they were in favour of the change or not. The result of this informal ballot was 159 members in favour and 17 against the proposed change.

At the July meeting the following proposal was carried unanimously:—

"That Rule 1 be rescinded and the following substituted:—

"The name of the Society shall be 'The Malayan Branch of the Royal Asiatic Society'."

The Resolution is subject to confirmation at the Annual General Meeting to be held in February, 1922.

Franking Privileges. The privilege of free postage for the Society's publications and correspondence addressed to places in the Straits Settlements has now been extended to the F. M. S., the four Unfederated States, and Brunei, whose Governments have kindly agreed to accept the Hon. Secretary's frank. This concession will result in a considerable reduction of our postage expenses.

Journals. Three Journals were issued for the year. No. 83 appeared in April, a general number of 173 pages. A Special number with only a limited number of copies was published in September. This is devoted to a very important Flora of Borneo by Dr. E. D. Merrill, Director of the Bureau of Science, Manila. It fills 637 pages, took 3 years to print and cost the Society $2,870. The Council decided to issue this Journal only to such members who cared to ask for it, as it was thought that the contents being somewhat of a technical nature would not interest all members of the Society.

No. 84 was printed by the end of the year, but owing to an unfortunate delay over the illustrations, could not be issued until January, 1922. It is devoted to an article by Mr. C. N. Maxwell on Malayan Fishes, covering 102 pages, and illustrated by 72 plates. The total cost of this number is borne by the Department of Supplies for whom a special edition in an attractive cover has been printed off for sale.

Thirteen contributed papers to the Journal against twelve in 1920. The variety of subjects covered was well-maintained. Malayan folk-lore heads the list with eight papers from Dr. Winstedt. There were five Zoological papers, including three on mammals, one on fishes, and one on insects, one important botanical paper by Dr. Merrill already mentioned, one Malay vocabulary, one on Malay History, and other papers on such diverse subjects as Contraband, Chinese Marriages, Malay Studies, the late Odoardo Beccari. Altogether 21 papers were published against 25 in 1920.

It was pointed out in the last Report that the burden of authorship falls on too few. In the list of Members published in April an asterisk was placed against the name of all those who had ever contributed papers to the Society's Journal. 41 Members are thus distinguished.

It is hoped that with the big influx of new Members—over 200 in the last two years—the little band of authors will be considerably extended. The Journal now in preparation for issue early in 1922 contains papers from Members who have not hitherto supported the Society in this way. But more are required. Particular attention may be drawn to the need of short articles or notes, which formed such an attractive feature of the earlier Journals. The Society's field of work is wide, covering as it does the whole of the Malay Peninsula and neighbouring Malayan countries. Their history is as yet untold, their ethnological, zoological and botanical secrets still unravelled.

Finances. The Hon. Treasurer's statement of accounts for the year 1921 shows credit balances carried forward to the total of $1,632.96 against $1,609.27 at the end of 1920. A large reserve had necessarily been built up during the last three years to meet the heavy cost of printing Dr. Merrill's important paper. To pay for this the Fixed Deposit of $2,000 was withdrawn, leaving our two investments (Victory Loan $2,500 and S. S. War Loan $2,200) untouched.

Thanks to the large addition of new Members the subscriptions for the year showed a considerable increase over those for the previous year: $1,490* against $1,130 for 1920. Ten Members compounded for life membership. The total number of Life Members is now 45, to which must be added 18 Honorary and Corresponding Members who pay no Subscriptions (although many of them have done so in the past before their election to the higher form of membership). The Council decided to set aside $2,500 (invested in Victory Loan) as a "Life Members' Reserve." Receipts from sales of Journals and Maps, amounted to $949 against $765 in 1920.

The cost of printing remains abnormally high and no relief in this direction appears likely as yet. With larger membership however the Council hopes to maintain an annual output of 300 pages without recommending an increase in subscriptions.

---

* The Hon. Treasurer's statement shows $1,690 received during the year. This includes $110 for arrears of subscriptions (1919 and 1920), and $90 for subscriptions paid in advance (1922-24).

Library. 76 Institutions and Societies are now on the Society's Exchange List. From these and other sources 248 publications were received during the year.

The Council's policy of eliminating certain publications was continued. Further geological, museum and botanical journals were issued on indefinite loan respectively to the Government Geologist (Batu Gajah), the Director Raffles Museum (Singapore) and the Director of Gardens (Singapore). A considerable amount of shelf-room was saved thereby and facilitated the Hon. Librarian's work of re-arrangement.

J. C. MOULTON,

Hon. Secretary.

STRAITS BRANCH, ROYAL ASIATIC SOCIETY.

Receipts and Payments Account for the year ended 31st December, 1921.

Receipts.

To Cash		
Mercantile Bank of India Ltd.		
Current Account	$1,609.27	
Fixed Deposit	2,000.00	
Petty Cash in hand	5.67	
		$3,614.94
,, Subscriptions		
Annual	$1,690.00	
Life Members	500.00	
		$2,190.00
,, Interest		
Investments	$245.00	
Bank	144.23	
		$ 389.23
,, Sales		
Journals	509.70	
Maps	439.20	
Sundries	1.18	
		$ 950.08
" Annual Dinner per contra		$ 286.61
		$7,430.86

Payments.

By Printing		
Journal No. 83	$1,698 00	
Special Journal	2,870.50	
Map for Journal No. 85	78.00	
Photographs	35.00	
Circulars to members	42.00	
		$4,723.50
,, Stationery		181.00
,, Salaries		288.00
,, Postage and Petties		218 34
,, Library		
Book-binding	$73.00	
Photograph	6.00	
Books	21.45	
		$ 100.45
,, Annual Dinner per contra		286.61
,, Cash		
Mercantile Bank of India Ltd.		
Current Account	1,616.63	
Petty Cash in hand	16.33	
		$1,632.96
		$7,430.86

The Society also holds $2,200 in 5½% Conversion Loan.
$2,500 in 5% Victory Loan.

SEE TIONG WAH,
Hon. Auditor.

C. BAZELL,
Hon. Treasurer.

List of Members for 1922.

(As on 1st January, 1922.)

* *Life Members.* † *Contributors to the Society's Journal.*

Honorary Members.

Year of Election.	
1890.1918.	† Blagden, C. O., School of Oriental Studies, Finsbury Circus, London. (Hon. Secretary 1896).
1921.	Brandstetter, Prof. Dr. R., Luzern, Switzerland.
1894.1906.	Collyer, W. R., I.S.O., Hacford Hall, Reepham, Norfolk, England. (Council 1904: Vice-President 1897-1900, 1902, 1904-1905).
1903.1917.	† Galloway, Dr. D. J., British Dispensary, Singapore. (Vice-President 1906-1907: President 1908-1913).
1895.1920.	† Hanitsch, Dr. R., 99 Woodstock Road, Oxford, England. (Council 1897, 1907-1909: Hon. Treasurer 1898-1906, 1910-1911, 1914-1919: Hon. Secretary 1912-1913).
A Founder 1878.	† Hose, Rt. Rev. Bishop G. F., Wyke Vicarage, Normandy near Guildford, England. (Vice-President 1890-1892: President 1878-1880, 1894-1907).
1921.	Perak, H. H. The Sultan of, K.C.M.G., The Astana Negara, Bukit Chandan, Kuala Kangsar, Perak.
1878.	† Perham, Ven. Archdeacon J., Chard, Somerset,
1890.1912.	† Ridley, H. N., C.M.G., M.A., F.R.S., 7 Cumberland Road, Kew Gardens, Surrey, England. (Council 1894-1895: Hon. Secretary 1890-1893, 1897-1911).
1916.	Sarawak, H. H. The Rajah of, Kuching, Sarawak.
1885.	Satow, Sir Ernest M., Beaumont, Ottery St., Mary, Devon, England.
1894.1921.	† Shellabear, Rev. W. G., D.D., c/o Board of Foreign Missions, 150, Fifth Avenue, New York City, U. S. A. (Council 1896-1901, 1904: Vice-President 1913: President, 1914-1918).
1921.	Snouck-Hurgronje, Prof. Dr., Leiden, Holland.
1921.	Van Ronkel, Dr. Professor of Malay, Zoeterwoudsche Singel 44, Leiden, Holland.

Corresponding Members.

1920.	† Annandale, N., D.SC., F.A.S.B., Indian Museum, Calcutta.
1920.	† Laidlaw, F. F., M.A., F.Z.S., Hyefield, Uffculme, Devonshire, England.

1920. † Merrill, E. D., Ph.D. Director, Bureau of Science. Manila.
1920. † Moquette, J. P., Kebonsireh 36, Weltevreden, Java.

Ordinary Members.

1903. Abbott, W. L., 400, South 15th Street, Philadelphia,
1918. Abdul-Majid bin Haji Zainuddin, Education Office, Taiping, Perak.
1916. Abraham, H. C., Survey Dept., Kuala Lumpur.
1909. Adam, Frank, The Straits Trading Co., Singapore.
1907. Adams, Sir Arthur, K.B.E., Rockleigh, Swanage, Dorset.
1921. Adams, C. D., Miri, Sarawak.
1910. Adams, H. A., Kuching, Sarawak.
1917. Adams, J. W., M.R.C.S., L.R.C.P., B.A., M.B., B.C., Medical and Health Office, Penang.
1920. Adams, P. M., Lawas, Sarawak.
1917. Adams, R. H., Topham, Jones and Railton, Ltd., Singapore.
1909. Adams, T. S., Batu Gajah, Perak.
1919. * Adelborg, F., Jenderata Estate, Telok Anson, Perak.
1913. Allen, Rev. George Dexter, M. A., Windermere, St. Thomas Walk, Singapore.
1914. Allen, H. C. W., Boustead and Co., Singapore.
1921. Allen, L. A., Acting Resident, Brunei.
1917. Allen, P. T., B.A., Chinese Protectorate, Singapore.
1921. Allen, Dr. R., B.Sc., Sarawak Oilfields, Miri, Sarawak.
1921. Allen, W. H. R., The Straits Trading Co., Singapore.
1914. Amery, Rev. A. J., B.D., Outram Road School, Singapore. (Council 1921).
1921. Andreini, Capt. E. V., Kapit, Sarawak.
1908. Arthur, J. S. W., M.A., Assistant Adviser, Kedah.
1921. Austen, K. W. H., c/o Police Office, Penang.
1908. * Ayre, C. F. C., High School, Malacca.
1921. Aziz, Unku Abdul, Johore Bahru, Johore.
1915. Baddeley, F. M., B.A., Under Secretary, Singapore.
1921. Badheka, Mohaul O., 21 Malacca Street, Singapore.
1919. * Bailey, A. E., Mountmillan, Knowles Hill, Newton Abbott, England.
1915. Bain, Norman K., B.A., Ipoh, Perak.
1912. † Baker, A. C., M.C., B.A., Penang.
1921. * Ball, H., Inspector of Schools, Malacca.
1916. Banks, H. H., Sanitary Board, Seremban.

1899. * Banks, J. E., c/o The American Bridge Co., Cambridge, Pa., U. S. A.

1920. Barbour, Dr. T., Museum of Comparative Zoology, Harvard University, Cambridge, Mass., U. S. A.

1920. Bardham, Rai Sahib, S.N., Medical School, Singapore.

1921. Barnes, J. R., Kuching, Sarawak.

1910. Bartley, W., M.B.E., B.A., c/o Secretariat, Singapore.

1921. Baughan, G. E., S.S. Police, Singapore.

1914. Bazell, C., Vade and Co., Singapore. (Hon. Librarian 1916-20: Hon. Treasurer 1921—).

1909. Bean, A. W., c/o Messrs Robinson and Co., Singapore.

1921. Beard, H., The Asiatic Petroleum Co., Miri, Sarawak.

1921. Belgrave, W. N. C., Agric. Dept., Kuala Lumpur.

1913. Bell, V. G., Kuala Lumpur.

1921. Bell, W. C. B., Bell and Co., Singapore.

1921. Benjamin, Major E. V., M.C., Asiatic Petroleum Co., Miri, Sarawak.

1910. * Berkeley, H., F. M. S. Civil Service, Grik, Upper Perak.

1912. Bicknell, J. W., U. S. Rubber Plantations, Inc., 1790 Broadway, New York, U. S. A.

1885. Bicknell, W. A. 3 Alexandra Terrace, Exmouth, Devon.

1908. Bishop, Major C. F., R. A.

1921. Black, Major K., Tan Tock Seng Hospital, Singapore.

1884. † Bland, R. N., C.M.G., c/o Messrs H. S. King and Co., 9 Pall Mall, London, S. W. England, (Council, 1898-1900: Vice-President, 1907-1909).

1921. Blasdell, Rev. R., Anglo-Chinese School, Ipoh, Perak.

1910. Boult, F. F., Limbang, Sarawak.

1919. * Bourne, F. G., D. P. P.'s Office, Singapore.

1921. Boyd, R., Labour Office, Penang.

1918. Boyd, W. R., Bentong, Pahang.

1915. Boyd-Walker, J. W., Barker and Co., Singapore.

1913. † Bradell, R. St. J., Bradell Bros., Singapore.

1918. Bradney, G. P., Audit Office, Kuala Lumpur.

1921. Bratton, A. G., Messrs Guthrie and Co., Singapore. (Council 1921—).

1897. Brockman, Sir Edward L., K.C.M.G., 88 Cannon Street, London, E. C. 4.

1909. † Brooks, C. J., Lebong Tandai, Post Ketaun, Benkoelen, Sumatra.
1909. Brown, Mr. Justice A. V., Johore Bahru, Johore.
1915. Brown, C. C., b.a., c/o Crown Agents, London.
1921. Browne, T. W., Kuala Pilah Estate, Negri Sembilan.
1913. * Bryan, J. M., c/o Messrs The Borneo Co., Ltd., Fenchurch Street, London, E. C.
1887. Bryant, A. T., Messrs Bryant and Ryde, 37 Marsh Lane, London, E. C., (Council 1907, 1910: Vice-President, 1912, 1914-1916).
1912. † Burkill, I. H., Botanic Gardens, Singapore, (Council, 1913, 1921—: Hon. Secretary, 1914-1917).
1921. Butterfield, H. M., Alor Star, Kedah.
1913. † Caldecott, Andrew, b.a., Secretariat, Kuala Lumpur.
1921. Campbell, F. M., Wardieburn Estate, Kuala Lumpur.
1916. † Campbell, Professor J. Argyll, m.d., d.sc., c/o Messrs W. and F. Haldane, 4 North Charlotte St., Edinburgh, Scotland. (Council 1917, 1919).
1918. Carpmael, H., Municipality, Singapore.
1921. * Cavendish, A., Taiping, Perak.
1910. Chancellor, Hon. Capt. A. R., Inspector-General of Police, Singapore.
1906. Chapman, W. T., b.a., c/o Crown Agents, London.
1921. Chasen, F. N., m.b.o.u., Raffles Museum, Singapore.
1921. Cheers, E., S. S. Police, Trengganu.
1913. * Choo Kia Peng, The Hon. Mr., Kuala Lumpur.
1913. Chulan, Raja, ibni Ex-Sultan Abdullah, Kuala Kangsar, Perak.
1921. Clark, H. T., Inspector of Schools, Singapore.
1921. Clark, Dr. W. E. Le Gros, P. M. O., Kuching, Sarawak.
1921. Clayton, G. E., Cadets' Bungalow, Penang.
1911. Clayton, T. W., b.a., Adviser, Perlis.
1914. * Clement, W. R. T., Mukah, Sarawak.
1917. Clifford, G. F. W., Ayer Kuning South, Negri Sembilan.
1920. * Collenette, C. L., c/o Barker and Co., Singapore.
1897. * Conlay, W .L., Kuala Lumpur.
1921. Connell, Mrs. J. J., c/o Connell Bros., Singapore.
1899. Cook, Rev. J. A. B., Gilstead, Singapore.
1910. Cook, W. Wallace, c/o The Straits Trading Co., Singapore.
1921. Cooney, A. C., Govt. English School, Alor Star, Kedah.

1920. Cotterill, Walter S., Miri, Sarawak.
1921. Coulson, N., Kedah.
1921. Cowap, J. C., Govt. Analysts' Office, Penang.
1921. Crandell, Miss, Anglo-Chinese Girls' School, Penang.
1921. Cranna, Gordon, Y. M. C. A., Singapore.
1917. Crichton, R., District Officer, Kuala Kangsar.
1921. Crocker, H. B., Kuching, Sarawak.
1917. Cross, Rev. W., M.A., Cavanagh Road, Singapore.
1910. Croucher, F. B., M.B., C.M., c/o Crown Agents, London.
1917. † Cubitt, G. E. S., Conservator of forests, S. S. and F. M. S., Kuala Lumpur.
1921. Cullen, W. G., c/o Barker and Co., Singapore.
1910. * Daly, M. D., Kuala Lumpur.
1918. * David, P. A. F., B.A., Singapore.
1921. Davison, A. W., c/o Huttenbach Bros., Singapore.
1921. Dennys, S. E., Alor Star, Kedah.
1907. Dent, F., M.SC., PH.D., F.I.C., Government Analyst, Singapore.
1921. Deshmukh, G. B., Botanic Gardens, Singapore.
1903. * Deshon, H. F., F.R.G.S., Southfield, Combe Down, Bath, England.
1921. Dickinson, A. H., S. S. Police, Singapore.
1897. Dickson, E. A., District Officer, Klang, Selangor.
1921. * Dickson, P. L., St. Andrews' School, Singapore.
1920. Dodds, H. B., M.D., General Hospital, Singapore.
1921. † Douglas, F. W., Commissioner of Lands, Kuala Lumpur.
1905. Douglas, R. S., F.R.G.S., Baram, Sarawak.
1921. Dryburgh, A. M., Jelebu, Negri Sembilan.
1910. Dunman, W., Grove Estate, Grove Road, Singapore.
1915. * † Dussek, O. T., c/o Crown Agents, London.
1921. Eaton, B. J., O.B.E., Agric. Dept., Kuala Lumpur.
1921. Edwards, S. J., A.R., L.B.A., c/o Messrs Booty and Co., Singapore.
1885. Egerton, Sir Walter, K.C.M.G., Fir Toll, Mayfield, England.
1921. Elder, Dr. E. A., 4 Battery Road, Singapore.
1918. Elliot, F. M., O.B.E., Gosfield Vicarage, Halstead, Essex, England.
1913. Ermen, C., Kuching, Sarawak.
1918. † Evans, I. H. N., The Museum, Taiping, Perak.
1910. Evans, W., Dovercourt, 7 Upper Beulah Road, Upper Norwood, London, S. E. 19.
1919. Fahs, C. H., Secretary, Missionary Research Library, 25 Madison Avenue, New York City, U. S. A.

1910. Falshaw, P. S., M.R.C.V.S., Government Veterinary Department, Singapore.
1909. Farrer, R. J., Municipal Offices, Singapore.
1911. * Ferguson-Davie, Rt. Rev. Dr. C. J., Bishop of Singapore. (Council. 1912-1913).
1909. Ferrier, J. C., c/o The Borneo Co., Soerabaya, Java.
1917. Finlayson, G. A., M.A., M.B., General Hospital, Singapore.
1919. * Finnie, W., The United Engineers, Ltd., Singapore.
1910. Firmstone, H. W., Sentosa, Ripple, Dover. (Council 1918-9: Vice-President, 1920).
1897. * Flower, Major S. S., O.B.E., Zoological Gardens, Ghizeh, Egypt.
1921. Forrer, H. A., F. M. S., Civil Service, Kuala Lumpur.
1921. Foulger, R. G., S. S. Police, Singapore.
1918. Foxworthy, Dr. F. W., Kuala Lumpur.
1921. * Fraser, Hon. Mr. F. W., Government Secretary, Jesselton, British North Borneo.
1908. Freeman, D., c/o Messrs Freeman and Madge, Kuala Lumpur.
1910. * Frost, Meadows, B.A., Batu Gajah, Perak.
1912. Gallagher, W. J., M.A., U. S. Rubber Plantations, Inc., Medan, Sumatra.
1917. Garnier, Rev. Keppel, Penang.
1920. Geale, Dr. W. J., Ulu Kelantan.
1921. Gibson, L. B., Cadet, Penang.
1903. Gibson, W. S., B.A., Legal Adviser, Kuala Lumpur.
1902. * † Gimlette, Dr. J. D., c/o Crown Agents, London.
1916. Glennie, Dr. J. A. R., Municipal Offices, Singapore.
1918. Gloyne, G. B., Samarang, Java.
1918. Goldie, R. M., United Engineers, Ltd., Ipoh, Perak.
1916. Goodman, A. M., B.A., Chinese Secretariat, Kuala Lumpur.
1920. Gordon-Hall, Capt. W. A., Kuala Lipis, Pahang.
1909. Goulding, R. R., Survey Dept., Kuala Lumpur.
1919. Gow, G. Aubrey, Lebong Tandai, Benkoelen, Sumatra.
1918. Graham, Major A. McD., c/o Crown Agents.
1921. Graham, W., Sarawak Oilfields, Miri, Sarawak.
1921. Griffiths, C. S., Kuching, Sarawak.
1911. Griffiths, J., Survey Office, Singapore.
1918. Griffin, N. A. M., c/o Crown Agents, London.
1919. Grist, D. H., Dep of Agriculture, Kuala Lumpur.
1916. Gupta, Shiva Prasad, Nandanshu Street, Benares City, United Provinces, India.

1921. Haines, W. A. C., A. C. of Police, Alor Star, Kedah.
1907. Hall, Hon. Mr. G. A., Resident Councillor, Penang. (Vice-President 1921).
1914. Hall, J. D., b.a., Colonial Secretariat, Singapore.
1918. Hallaway, J. P., Gas Engineer, Singapore.
1911. * Hallifax, F. J., Singapore.
1921. Ham, G. L., S. S. Civil Service, Singapore.
1915. † Hamilton, A. W., Alor Star, Kedah.
1918. Hampshire, Hon. Mr. A. K. E., Kuala Lumpur.
1921. Handover, W. P., Sungei Nipah Estate, Port Dickson.
1921. Hardie, J. A. H., Kuching, Sarawak.
1909. Harrington, A. G., Municipal Offices, Singapore.
1921. Hart, Dr. H. H., b.a., 3363, Washington Street, San Francisco, California.
1921. Harvey, R. N., S. S. Police, Singapore.
1921. Hashim, Capt. N. M., Penang.
1921. Hawkins, G., D. O., Balik Pulau, Penang.
1919. Hay, M. C., b.a., Asst. Adviser, Batu Pahat, Johore.
1921. Hayes, L. J., c/o Messrs Fraser and Co., Singapore.
1904. * Haynes, A. S., Kuala Lumpur. (Council, 1920).
1921. Henderson, M. R., F. M. S. Museums, Kuala Lumpur.
1909. Hennings, W. G., c/o Mansfield and Co., Singapore.
1917. Hereford, G. A., m.a., Johore Bahru.
1878. Hill, E. C., The Manor House, Normandy near Guildford, England.
1921. Holgate, M. R., Malay College, Malacca.
1921. Holleman, W., Sawah Loento, Sumatra.
1920. Holman-Hunt, C. B., b.a., c/o Crown Agents, London.
1891. † Hoynck, van Papendrecht, P. C., c/o Heldring and Pierson, The Hague, Holland.
1909. Hubback, T. R., Kuala Lipis, Pahang.
1909. Hughes, J. W. W., c/o Crown Agents, London.
1907. Humphreys, J. L., Trengganu.
1921. Hoops, Dr. A. L., P. C. M. O., Singapore.
1917. * Hose, Dr. Charles, f.r.g.s., Redleaf, Riddledown Road, Purley, Surrey.
1897. Hose, The Hon. Mr. E. S., The Residency, Seremban.
1921. Hunter, Dr. P. S., c/o Crown Agents, London.
1921. Irving, G. C., Ag. Resident, Jesselton, B. N. B.
1921. Ismail bin Bachok, Dato, d.p.m.j., Johore Bahru Johore.
1921. Ivens, F. B., Bannon and Bailey, Kuala Lumpur.
1921. Ivery, F. E., Kedah.

1921. Jacques, Dr. F. V., Medical Officer, Seremban.
1921. Jaefar, Inche Onn bin, Johore Bahru, Johore.
1921. Jalaludin, Ahmed, Malay College, Kuala Kangsar.
1918. James, D., Goebilt, Sarawak.
1916. James, Hon. Mr. F. S., C.M.G., Singapore.
1910. Jamieson, Dr. T. Hill, 4 Bishop Street, Penang.
1907. Janion, E. M., 5 Gracechurch St., London. E. C. 3.
1918. Jansen, P., T. Pzn., Lebong Tandai, Post Ketaun, Benkoelen, Sumtara.
1918. Jeavons, F. C., Sione Estate, Batu Caves, Selangor.
1921. Jermyn, L. A., Malay College, Kuala Kangsar.
1911. Jelf, A. S., Civil Service, Singapore.
1910. Johnson, B. G. H., Telok Anson, Perak.
1911. Johnson, H. S. B., c/o The Borneo Co., Ltd., 28 Fenchurch Street, London. E. C.
1920. Johnston, J., Librarian, Raffles Library, Singapore. (Hon. Librarian 1921—).
1918. Jones, Fleet Paymaster E. P., 20 Waterbell Street, Rye, Sussex, England.
1910. Jones, H. W., Kuala Kubu, Selangor.
1913. Jones, S. W., District Officer, Kuala Lipis, Pahang.
1919. *Jordan, A. B., Chinese Protectorate, Seremban.
1921. Joy, M. M., The Asiatic Petroleum Co., Miri, Sarawak.
1916. Kamaralzaman, Raja, bin Raja Mansur, Tapah, Perak.
1921. Kassim, Tunku, bin Sultan Abdul Hamid Halimshah, Supdt. of Monopolies and Customs, Alor Star, Kedah.
1916. Kellagher, G. B., 50 Greenvale Road, Eltham, London, S. E. 9.
1909. Kemp, Hon. Mr. W. Lowther, c/o Messrs F. W. Barker and Co., Singapore.
1913. Kempe, J. E., c/o Crown Agents, London.
1920. Kerr, Dr. A. F. G., Govt. Botanist, Bangkok, Siam.
1921. Kinder, C. S., S. S. Police, Singapore.
1920. King, E. M., Juru Estates, Ltd., Province Wellesley.
1916. Kinsey, W. E., Forest House, Seremban.
1921. Kitching, T., District Surveyor, Kuala Kangsar.
1900. Kloss, C. Boden, The Museum, Kuala Lumpur, (Council, 1904-1908: Vice-President, 1920-21).
1915. Knight, Valentine, Raffles Museum, Singapore. (Hon. Treasurer 1920).
1920. Koek, E. R., 29 Malacca Street, Singapore.
1920. Kortright, F. H., Bau, Sarawak.

1914. Lambourne, J., Castleton Estate, Telok Anson, Perak.
1920. Law, Capt. H. R. S., c/o The Asiatic Petroleum Co., Ltd., Singapore.
1906 † Lawrence, A. E., Kuching, Sarawak.
1921. Lee, J. Romanis-, St. John's Hall, Hongkong.
1921. Lee, L. G., Labu Estate, British North Borneo.
1913. Leicester, Dr. W. S., Kuantan, Pahang.
1917. Lemberger, V. V., c/o The United Engineers, Ltd., Singapore.
1894. * Lemon, Hon. Mr. A. H., c/o Crown Agents, London. (Vice-President, 1916-18).
1920. Lendrick, J., Norregate 34, Aarhus, Denmark.
1890. Lewis, J. E. A., b.a., Harada Mura, Kobe, Japan.
1915. Lewton-Brain, L., Director of Agriculture, Kuala Lumpur.
1897. Lim Boon Keng, Dr. o.b.e., m.d., c/o The Dispensary, Singapore. (Council, 1921).
1915. Lim Cheng Law, Millview, Penang.
1921. Lindon, N. L., S. S. Police, Singapore.
1918. Loh Kong Imm, Sepang-Tanah Merah Estate, Sepang, Selangor.
1914. Lornie, J., Land Office, Singapore.
1909. Low, H. A., c/o Messrs Adamson, Gilfillan and Co., Singapore.
1921. Lowe, Capt. C. P., Kuching, Sarawak.
1918. Lucy, G. H. R., m.r.c.s., c/o Crown Agents, London.
1921. Lynch, J. R., c/o F. M. S. Railways, Singapore.
1907. Lyons, Rev. E. S., c/o Methodist Publishing House, Manila, P. I.
1918. Macalister, G. H., m.a., b.ch., m.d., d.p.h., m.r.c.s., Medical School, Singapore.
1920. MacBryan, G. T. M., Sibu, Sarawak.
1910. * † MacFadyen, Eric, c/o Sports Club, London.
1920. MacKie, Vivian, Kuala Lumpur.
1910. MacLean, L., Singapore.
1921. MacMillan, I. C., A. S. P., Penang.
1921. Madge, E. E., Juasseh Estate, Kuala Pilah.
1918. Madge, Raymond, Kuala Lumpur.
1920. Mahmud, Raja, bin Raja Ali, Agricultural Dept., Kuala Lumpur.
1904. Mahomed, Hon. Dato, bin Mahbob, Johore Bahru, Johore.
1903. Makepeace, W., c/o Singapore Free Press, Singapore. (Council, 1914, 1916, 1920: Hon. Librarian, 1909-1912: Vice-President, 1917: Hon. Secretary, 1918-1919).

1908. Main, T. W., Cheng Estate, Malacca.
1921. Malet, A. H., Rengam, Johore.
1921. Manchester, H. L., Municipality, Singapore.
1916. Mann, W. E., Chinese English School, Samarang, Java.
1907. * Marriner, J. T., Kuantan, Pahang.
1902. † Marriott, The Hon. Mr H., b.a., General Adviser, Johore. (Council, 1907-1908, 1910-1913, 1915-1918; Vice-President, 1919).
1909. Marsh, F. E., Municipal Offices, Singapore.
1920. Marsh, W., Municipality, Singapore.
1909. Marshall, Harold, B., 8 Medina Villas, Hove, Sussex.
1918. Martin, T. A., North Lansdale, B. C., Canada.
1921. Maruzon and Co., Ltd., Tokyo, Japan.
1921. Mather, N. F. H., The Fort, Klang.
1921. † Maxwell, C. N., District Officer, Klang.
1903. † Maxwell, Hon. Mr. W. G., c.m.g., Kuala Lumpur. (Council, 1905, 1915: Vice-President, 1911-1912, 1916, 1918, 1920: President, 1919).
1909. May, C. G., c/o Crown Agents, London.
1909. McArthur, M. S. H., Alor Star, Kedah.
1920. McCabe, Dr. J. B., m.c., m.b., ch.b., Kapoewas Estate, Pontianak, West Borneo.
1897. McCausland, C. F., Kuala Lumpur.
1920. McIver, Miss Agnes, Kuala Lumpur.
1921. McLeod, D., King Edward's School, Taiping, Perak.
1914. † Mead, J. P., Forest Dept., Kuching, Sarawak.
1920. Millar, J. W. R., Port Dickson.
1921. Miller, J. I., Colonial Secretary's Office, Singapore.
1910. Miller, T. C. B., Fairlie, Nassim Road, Singapore.
1921. Mills, Commander, J. F., r.n., i.s.o., Port Swettenham.
1920. Monk, H. F., b.a., Mersing, Johore.
1920. Morkill, A. G., c/o Crown Agents, London.
1921. Moffat, R. M., Asiatic Petroleum, Miri, Sarawak.
1921. Mohammed, Syed, bin Syed Ali Idid, Chief Magistrate, Alor Star, Kedah.
1921. Morgan, S., Macfadyen, Wilde and Co., Singapore.
1909. * † Moulton, Major J. C., o.b.e., m.a., b.sc., Director, Raffles Museum and Library, Singapore, (Council 1916-1919: Hon. Secretary 1920,—).
1921. Mouat, Dr. J. R. Kay, King Edward VII Medical College, Singapore.
1920. Mowbray, G. A., de Chede, Asst. District Officer, Kuala Kangsar.
1915. * Mundell, H. D., c/o Messrs Sisson and Delay, Singapore.

1920. Murison, Hon. Sir J. W., Singapore. (President, 1920-21).
1913. Murray, Rev. W., M.A., Gilstead Road, Singapore.
1921. Nagalingam, C. K., Anglo-Chinese School, Port Swettenham.
1917. Nagle, Rev. J. S., M.A., Singapore.
1909. † Nathan, J. E., B.A., c/o Crown Agents, London.
1921. Nathan, S. J., Sarawak Oilfields, Miri, Sarawak.
1921. Neilson, Major J. B., M.C., Education Dept.. Alor Star, Kedah.
1920. Neubronner, A. W., 1 Killiney Road, Singapore.
1920. Neubronner, C. A., Singapore.
1910. Niven, W. G., 11, Derby Crescent, Kelvinside, Glasgow, Great Britain.
1900. Norman, Henry, Alor Star, Kedah.
1920. Norris, F. de la Mare, B.SC., F.E.S., Kuala Lumpur.
1906. Nunn, B., B.A., Ag. District Judge, Singapore.
1920. Nutt, W., O.B.E., c/o Straits Trading Co., Singapore.
1911. O'May, J., c/o Messrs Barker and Co., Singapore.
1916. Ong Boon Tat, Messrs Ong Sam Leong and Co., Stamford Road, Singapore.
1921. Ong Thye Ghee, 39-2, Dickson Road, Singapore.
1921. Orchard, H. A. L., St. Andrews' School, Singapore.
1921. Osborne, R. B., M.C., Private Secretary, Government House, Singapore.
1920. O'Sullivan, T. A., Education Dept., Kuala Lipis, Pahang.
1920. Othman, Megat, Secretary to Majlis Ugama Islam, Kota Bahru, Kelantan.
1913. † Overbeck, H., c/o Behn, Meyer and Co., Samarang, Java.
1919. Park, Mungo, Vimy Estate, Kuang, Selangor.
1921. Parnell, E., Kuching, Sarawak.
1908. * † Parr, The Hon. Major C. W. C., O.B.E., Residency, Taiping, Perak.
1921. Pedlow, J., Asst. Protector of Chinese, Penang.
1921. * Paterson, Major H. S., Civil Service, Trengganu.
1921. Peach, Rev. Anglo-Chinese School, Penang.
1917. Pears, R., c/o F. W., Barker and Co., Singapore.
Kota Bahru, Kelantan.
1921. Pendlebury, H. M., The Museum, Kuala Lumpur.
1914. † Pepys, W. E., Secretariat. Kuala Lumpur.
1920. Perkins, C. J., Survey Dept., Kuala Lumpur.
1917. Perkins, D. Y., Messrs Drew and Napier, Singapore.
1920. Peskett, A. D., "Simla," Halland, Sussex, England.
1920. Peters, E. V., Kuala Kemaman, Trengganu.

1921. * Plummer, W. P., Messrs Derrick and Co., Singapore.
1921. Ponnambalam, P. N., Messrs Coode, Mathews, Fitzmaurice and Wilson, Johore Bahru, Johore.
1910. Pratt, Capt. E., Kuala Lumpur.
1921. Price, C. W. H., S. S. Police, Singapore.
1906. Pykett, Rev. G. F., M. E. Mission, Penang.
1921. Raffles, Major Stamford, o.b.e., Deputy Commissioner of Trade, Kuala Lumpur.
1915. Raggi, J. G., Phlab Phla Jai Road, Bangkok, Siam.
1917. Rattray, Dr. M., Europe Hotel, Singapore.
1916. Rayman, L., c/o Fed. Secretariat, Kuala Kubu.
1910. * Reid, Dr. Alfred, c/o Principal Med. Officer, Kuala Lumpur.
1910. Reid, Alex, c/o Messrs McAlister and Co., Singapore.
1921. Reis, H. C., Asiatic Petroleum Co., Miri, Sarawak.
1921. Rex, Marcus, Kuala Lumpur.
1915. Richards, A. F., Colonial Secretary's Office, S'pore.
1921. Richards, Major F. W., d.s.o., m.c., Sarawak Oilfields, Miri, Sarawak.
1911. Richards, R. M., The Caledonia Estate, Province Wellesley.
1918. Ritchie, C., The Sagga Rubber Estates, Siliau, F. M. S.
1912. Robertson, J., c/o Messrs Lyall and Evatt, Singapore.
1911. Robinson, H., c/o Messrs Swan and Maclaren, Singapore. (Council 1916-1920).
1904. † Robinson, H. C., The Museum, Kuala Lumpur. (Vice-President, 1909, 1913: Council 1920).
1916. Rogers, A., h.m.i.c.e., Jasin, Malacca.
1921. Ross, E. A., Labour Office, Penang.
1896. Rostados, E., Lunas, South Kedah. (Council, 1901).
1921. Ruston, J. A. V., McNeill and Co., Samarang, Java.
1921. Rutter, Major E. O., Wattisfield Croft, Suffolk, England.
1921. Salleh, Inche Mohamed, bin Ali, s.m.j., Postmaster-General, Johore Bahru.
1921. Sanguinetti, Major W. R., o.b.e., m.a., State Engineer, Alor Star, Kedah.
1919. Santry, Denis, Swan and Maclaren, Singapore.
1920. Sathasivam, M., Public Works, Dept., Johore Bahru.
1921. Sauchelli, V., Kent Estate, Batu Caves, Selangor.
1896. Saunders, The Hon. Mr. C. J., b.a., Official Assignee, Singapore. (Vice-President 1910-1911, 1914-1915: President, 1916-1918).

1920.		Scharff, Dr. J. W., Health Office, Singapore.
1921.		Schider, Dr. R., Asiatic Petroleum Co., Miri, Sarawak.
1920.	*	Scott, Dr. G. Waugh, Sungei Siput, Perak.
1910.		Scott, R., b.a., Malacca.
1906.	†	Scrivenor, J. B., Govt. Geologist, Batu Gajah, Perak.
1888.		Seah Leang Seah, c/o Chop Chin Hin, Singapore.
1921.		Sear, Duncombe, Barker and Co., Kuala Lumpur.
1915.	*	See Tiong Wah, c/o Hongkong and Shanghai Bank Singapore.
1918.		Sennett, C. W. A., b.a., Kuala Lumpur.
1921.		Sheriff, Mohamed, bin Osman, Under Secretary, Alor Star, Kedah.
1921.		Simpson, P., Presgrave and Mathews, Penang.
1909.		Sims, W. A., c/o Commercial Union Assurance Co., Singapore.
1912.		Smith, Harrison, W., Papeete, Tahiti.
1921.		Sircom, H. S., c/o Crown Agents.
1921.		Skrine, W. F. de V., Kuching, Sarawak.
1921.		Smart, W., Sarawak Oilfields, Miri, Sarawak.
1921.		Smith, Dr. G. T. Foster, Asiatic Petroleum Co., Miri, Sarawak.
1921.		Smith, Capt. S. R., o.b.e., P. W. D., Kuala Lumpur.
1920.		Soh Yiew Jin, L., Devonshire Road, Singapore.
1910.		Song Ong Siang, Hon. Mr., m.a., l.l.m., c/o Messrs Aitken and Ong Siang, Singapore.
1921.		South, F. W., Dept. of Agriculture, Kuala Lumpur.
1918.		Stanton, Dr. A. T., Kuala Lumpur.
1910.		Steedman, R. S., Rahman Hydraulic Tin, Intan, Perak.
1920.		Stevens, F. G., Rodyk and Davidson, Singapore.
1910.		Still, A. W., c/o Straits Times, Singapore. (Council, 1914-1915).
1917.	* †	Stirling, W. G., Singapore.
1921.		Stooke, G. Beresford, Kuching, Sarawak.
1921.		Stowell, de la M., Malay College, Kuala Kangsar.
1911.		Stuart, E. A. G., Alor Star, Kedah.
1921.		Stubington, W. H., Survey Dept., Kuala Lipis, Pahang.
1910.	†	Sturrock, A. J., Kuala Kubu.
1917.		Sumner, H. L., c/o Crown Agents, London.
1921.		Sutcliffe, H., R. G. A. Research Laboratory, Pataling, Selangor.
1912.		Swayne, J. C., Bintulu, Sarawak.
1918.		Sykes, G. R., m.a., Chinese Protectorate, Singapore.

1908. Tan Cheng Lock, 59, Heeren Street, Malacca.
1913. Taylor, Lt. Clarence, J., Telok Manggis Estate, Sepang, Selangor.
1921. Taylor, E. R., Estates Dept., Singapore Harbour Board, Singapore.
1917. Tennent, M. B., Chiengmai, Siam.
1921. Terrell, A. K. á Beckett, Presgrave and Mathews, Penang.
1921. Thomas, L. A., A. S. of Police, Singapore.
1920. Thomson, H. W., B.A., British Adviser, Kelantan.
1921. Trewin, H. P., Govt. Printing Office, Singapore.
1921. Tyte, Lt. Col. J. H., Inspector of Prisons, Singapore.
1918. Uda, Raja Kuala Pilah, Negri Sembilan.
1918. Valpy, G. C., B.A., Income Tax Office, Singapore.
1887. † Van Beuningen, van Helsdingen, Dr. R., 135 Bukit Timah Road, Singapore. (Hon. Librarian, 1914-1915, 1920).
1921. Visser, W. D., Netherland Consular Service, Singapore.
1921. Wade, F. W., Architect, P. W. D., Alor Star, Kedah.
1921. Walton, B. S., Govt. Monopolies, Penang.
1909. Ward, A. B., Kuching, Sarawak.
1920. Warner, W. H. Lee, Singapore.
1917. Watson, J., Education Office, Penang.
1916. Watson, J. G., Forest Dept., Johore Bahru, Johore.
1916. Watson, Dr. Malcolm, Klang, Selangor.
1921. Webb, Major G. R. H., O.B.E., E. E. Telegraph Co., Singapore.
1920. Weisberg, H., District Officer, Jelebu, N. S.
1920. Weller, A. J., B.D., Chief Inspector of Schools, S. S., and F. M. S., Kuala Lumpur.
1910. Whitehead, C. B., Police Office, Butterworth, Province Wellesley.
1920. † Wilkinson, R. J., C.M.G., c/o Messrs Giraud and Co., Smyrna, Asia Minor.
1921. Willbourne, E. S., Asst. Geologist, Batu Gajah. Perak.
1921. Williams, E. T., Colonial Secretary's Office, Singapore.
1921. Williams, R. M., Paterson Simons & Co., Singapore.
1910. Williams, S. G., Municipal Offices, Singapore.
1919. Wilson, F. K., Segamat, Johore.
1921. Wilson, Dr. W. B., M.C., 4 Battery Road, Singapore.
1910. * Winkelmann, H., Malacca Street, Singapore.
1904. † Winstedt, R. O., M.A., D.LITT., Singapore. (Vice-President, 1914-1915, 1920-21).
1918. Wolde, B., Somme Rubber Co., Ltd., South Kedah.

1910. Wolferstan Hon. Mr. L. E. P., M.A., Resident Councillor, Malacca.
1902. Wolff, E. C. H., B.A., Director of Education, Singapore.
1908. * Wood, E. G., c/o Henry S. King and Co., London.
1913. Wood, W. L., The Cedars, Balsham, Cambridge, England.
1920. Woolley, G. C., Sandakan, British North Borneo.
1911. Worsley-Taylor, F. E., Vade and Co., Singapore.
1915. * Worthington, A. F., Taiping Perak.
1921. Wurtzburg, C. E., 52 Grange Road, Singapore.
1914. Wyley, A. J., Lebong Tandai, Benkoelen, Sumatra.
1917. * Yates, Major W. G., West Kent Regiment, Cox and Co., 16 Charing Cross, London.
1920. Yewdall, Capt. J. C., Sitiawan, Lower Perak.
1916. Young, E. Stuart, Kapoewas Estate, Pontianak, West Borneo.
1904. * Young, H. S., Rosemount, Tain, Rosshire, Scotland.

Members are particularly requested to inform the Hon. Secretary of any changes in their description or address.

RULES

of

The Straits Branch

of the

Royal Asiatic Society.

I. Name and Objects.

1. The name of the Society shall be 'The Malayan Branch of the Royal Asiatic Society.'[1]

2. The objects of the Society shall be:—

(a) The increase and diffusion of knowledge concerning British Malaya and the neighbouring countries.

(b) the publication of a Journal and of works and maps.

(c) the formation of a library of books and maps.

II. Membership.

3. Members shall be of three kinds—Ordinary, Corresponding and Honorary.

4. Candidates for ordinary membership shall be proposed and seconded by members and elected by a majority of the Council.

5. Ordinary members shall pay an annual subscription of $5 payable in advance on the first of January in each year. Members shall be allowed to compound for life membership by a payment of $50. Societies and institutions are also eligible for ordinary membership.

6. On or about the 30th of June in each year the Honorary Treasurer shall prepare and submit to the Council a list of those members whose subscriptions for the current year remain unpaid. Such members shall be deemed to be suspended from membership until their subscriptions have been paid, and in default of payment within two years shall be deemed to have resigned their membership.

No member shall receive a copy of the Journal or other publications of the Society until his subscription for the current year has been paid.

7. Distinguished persons, and persons who have rendered notable service to the Society may on the recommendation of the Council be elected Honorary members by a majority at a General meeting. Corresponding Members may, on the recommendation

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[1] With effect from 1st January 1923.

of two members of the Council, be elected by a majority of the Council, in recognition of services rendered to any scientific institution in British Malaya. They shall pay no subscription: they shall enjoy the privileges of members except a vote at meetings, eligibility for office and free receipt of the Society's publications.

III. Officers.

8. The officers of the Society shall be:—

A President.

Vice-Presidents not exceeding six, ordinarily two each from

(i) The Straits Settlements

(ii) The F. M. S. and

(iii) The Unfederated or other Protected States, although this allocation shall in no way be binding on the electors.

An Honorary Treasurer. An Honorary Librarian.

An Honorary Secretary. Four Councillors.

These officers shall be elected for one year at the Annual General Meeting, and shall hold office until their successors are appointed.

9. Vacancies in the above offices occurring during any year shall be filled by a vote of majority of the remaining officers.

IV. Council

10. The Council of the Society shall be composed of the officers for the current year, and its duties and powers shall be:—

(a) to administer the affairs, property and trusts of the Society.

(b) to elect Ordinary and Corresponding members and to recommend candidates for election as Honorary Members of the Society.

(c) to obtain and select material for publication in the Journal and to supervise the printing and distribution of the Journal.

(d) to authorise the publication of works and maps at the expense of the Society otherwise than in the Journal.

(e) to select and purchase books and maps for the Library.

(f) to accept or decline donations on behalf of the Society.

(g) to present to the Annual General Meeting at the expiration of their term of office a report of the proceedings and condition of the Society.

(h) to make and enforce bye-laws and regulations for the proper conduct of the affairs of the Society. Every such bye-law or regulation shall be published in the Journal.

11. The Council shall meet for the transaction of business once a month and oftener if necessary. Three officers shall form a quorum of the Council.

V. General Meetings.

12. One week's notice of all meetings shall be given and of the subjects to be discussed or dealt with.

13. At all meetings the Chairman shall in the case of an equality of votes be entitled to a casting vote in addition to his own.

14. The Annual General Meeting shall be held in February in each year. Eleven members shall form a quorum.

15. (i) At the Annual General Meeting the Council shall present a Report for the preceding year and the Treasurer shall render an account of the financial condition of the Society. Copies of such Report and account shall be circulated to members with the notice calling the meeting.

(ii) Officers for the current year shall also be chosen.

16. The Council may summon a General Meeting at any time, and shall so summon one upon receipt by the Secretary of a written requisition signed by five ordinary members desiring to submit any specified resolution to such meeting. Seven members shall form a quorum at any such meeting.

17. Visitors may be admitted to any meeting at the discretion of the Chairman but shall not be allowed to address the meeting except by invitation of the Chairman.

VI. Publications.

18. The Journal shall be published at least twice in each year, and oftener if material is available. It shall contain material approved by the Council. In the first number in each year shall be published the Report of the Council, the account of the financial position of the Society, a list of members, the Rules, and a list of the publications received by the Society during the preceding year.

19. Every member shall be entitled to one copy of the Journal, which shall be sent free by post. Copies may be presented by the Council to other Societies or to distinguished individuals, and the remaining copies shall be sold at such prices as the Council shall from time to time direct.

20. Twenty-five copies of each paper published in the Journal shall be placed at the disposal of the author.

VII. Amendments to Rules.

21. Amendments to these Rules must be proposed in writing to the Council, who shall submit them to a General Meeting duly summoned to consider them. If passed at such General Meeting they shall come into force upon confirmation at a subsequent General Meeting or at an Annual General Meeting.

Affiliation Privileges of Members.

Royal Asiatic Society. The Royal Asiatic Society has its headquarters at Grosvenor Street, London, W., where it has a large library of books, and MSS. relating to oriental subjects, and holds monthly meetings from November to June (inclusive) at which papers on such subjects are read.

2. By rule 105 of this Society all the Members of Branch Societies are entitled when on furlough or otherwise temporarily resident within Great Britain and Ireland, to the use of the Library as Non-Resident Members and to attend the ordinary monthly meetings of this Society. This Society accordingly invites Members of Branch Societies temporarily resident in Great Britain or Ireland to avail themselves of these facilities and to make their home addresses known to the Secretary so that notice of the meetings may be sent to them.

3. Under rule 84, the Council of the Society is able to accept contributions to its Journal from Members of Branch Societies, and other persons interested in Oriental Research, of original articles, short notes, etc., on matters connected with the languages, archaeology, history, beliefs and customs of any part of Asia.

4. By virtue of the afore-mentioned rule 105 all Members of Branch Societies are entitled to apply for election to the Society without the formality of nomination. They should apply in writing to the Secretary, stating their names and addresses, and mentioning the Branch Society to which they belong. Election is by the Society upon the recommendation of the Council.

5. The subscription for Non-Resident Members of the Society is 30/- per annum. They receive the quarterly journal post free.

Asiatic Society of Bengal. Members of the Straits Branch of the Royal Asiatic Society, by a letter received in 1903, are accorded the privilege of admission to the monthly meetings of the Asiatic Society of Bengal, which are held usually at the Society's house, 1 Park Street, Calcutta.

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Exchange List and Donations, 1921.

The following is a list of the Scientific Institutions and Societies on our Exchange List, together with the Publications received from them during the year 1921.

A list of Donations to the Society's Library is also appended.

AMERICA.

Canada.

TORONTO. Royal Canadian Institute.

United States of America.

BALTIMORE. John Hopkins University,

(i) *Circular, New Series, 1918, Pts. 5-10.*
—— *1919, Pts. 1-10.*
—— *1920, Pt. 1.*

(ii) *American Journal of Philology, Vol. 39, 1918, Pts. 2-4, Vol. 40, 1919, Pts. 1-4.*

BERKELEY. University of California,

(i) *Bulletin, Scripp's Institution of Biological Research, No. 9, 1919, No. 10, 1921.*

(ii) *Publications in Zoology, Indicës and Contents, Vols. 14, 17, 18, 1917-1919; Vol. 19, No. 6, 1919, Vol. 20, No. 7, 1921, Vol. 23, 1921—(Marine Decapod Crustacea of California).*

CAMBRIDGE. Museum of Comparative Zoology, Harvard, *Bulletin Vol. 64, 1920-21, Index; Vol. 64, Nos. 3-7, 1921, Vol. 65, Nos. 1-2, 1921.*

CHICAGO. Field Museum of Natural History,

(i) *Annual Reports, 1917, 1918, 1920.*

(ii) *Report Series, Vol. 5, Pts. 3-4.*

LINCOLN. University of Nebraska.

NEW YORK. American Museum of Natural History,

(i) *Bulletin, Vol. 39, 1918-19, Vol. 40, 1919, Vol. 41, 1919.*

(ii) *Novitates, No. 4, 1921.*

(iii) *Bibliography of Fishes.*

NEW YORK. Zoological Society, *Bulletin, Vol. 24, Pt. 2, 1921.*

OBERLIN. Oberlin College—Wilson Ornithological Club.

PHILADELPHIA. Academy of Natural Sciences, *Proceedings, Vol. 71, Pt. 3, 1919, Vol. 72, Pt. 2, 1920.*

PITTSBURG. Carnegie Museum,
- (i) *Annals, Vol. 11, Nos. 3-4, 1917, Vol. 12, Nos. 1-4, 1919, Vol. 13, Nos. 1-2, 1920.*
- (ii) *Memoirs, Vol. 7, Nos. 5-6, 1920.*
- (iii) *Annual Reports for 1918-20.*

WASHINGTON. Academy of Sciences, *Proceedings, Vol. 71, Pt. 3, 1919.*

WASHINGTON. Smithsonian Institution, U. S. National Museum,
- (i) *Herbarium Contributions, Vol. 20, Pts. 8-9, 1920*, Vol. 22, Pts. *4-5, 1921.*
- (ii) *Bulletins 100, Pts. 7-9, and 101, 1920; 105, 106, 109, 1920; 112, 115, 116, 1921.*
- (iii) *Annual Report, 1920.*
- (iv) *Proceedings, Vol. 56, 1920.*

WASHINGTON. United States Department of Agriculture, *Journal of Agricultural Research, Vol. 20, Pt. 6, 1920, and Index; Vol. 21, Pts. 8-12, 1921; Vol. 22, Pts. 1-3, 1921.*

HAWAIIAN ISLANDS (HONOLULU). Bernice Pauahii Bishop Museum,
- (i) *Memoirs, Vol. 6, Ser. 3, Pt. 3, 1919, Vol. 8, Pts. 1-2, 1921.*
- (ii) *Occasional Papers, Report for 1919, Vol. 7, Pts. 7-9, 1920, Vol. 8, Pt. 1, 1921.*

ASIA.

Ceylon.

ANURADHAPURA. Archaeological Survey of Ceylon.

COLOMBO. Ceylon Branch of the Royal Asiatic Society.

COLOMBO. Colombo Museum, *"Spolia Zeylanica," Vol. 10, Nos. 36-39, 1914-17, Vol. 11, Pts. 43-44, 1918-19.*

India.

BOMBAY. Bombay Branch of the Royal Asiatic Society.

BOMBAY. Bombay Natural History Society, *Journal, Vol. 26, Pt. 5, Vol. 27, Pt. 3, Vol. 28, Pt. 4, 1921.*

CALCUTTA. Asiatic Society of Bengal.
- (i) *Journal and Proceedings, Vol. 16, Pts. 5-8, 1920, Vol. 17, Pt. 1, 1921.*
- (ii) *Numismatic Supplement, No. 34, 1920, No. 35, 1921, and Index to No. 32, 1920.*

CALCUTTA. Indian Museum,
  (i) *Memoirs, Vol. 5, Nos. 7-8, Vol. 6, Vol. 7, No. 3, 1920-21.*
  (ii) *Records, Vol. 18, Nos. 4-5, Vol. 19, Nos. 3-5 and Index, Vol. 22, No. 1, 1920-21.*
  (iii) *Reports, 1917-20.*

CALCUTTA. University of Calcutta,
  (i) *Journal of the Dept. of Letters, Vol. 6-7, 1921.*
  (ii) *"Post-Graduate Teaching," 1919-1920.*

LAHORE. Panjab Historical Society.

PUSA. Agricultural Research Institute, Memoirs of the Department of Agriculture in India,
  (i) *Entomological Series.*
  (ii) *Bacteriological Series, Vol. 1, Pt. 8, 1920.*
  (iii) *Bulletin, Nos. 100-115, 1921.*

SIMLA. Archaeological Survey of India,
  (i) *Memoirs 3 and 5, 1920; 7, 8, 9 and 12, 1921.*
  (ii) *Reports for Northern, Frontier, Southern and Central Circles, 1920-21.*
  (iii) *"Tile Mosaics of the Lahore Fort," 1921.*

Burma.

RANGOON. Archaeological Survey of Burma,
  (i) *Epigraphia Birmanica, Vol. 2, Pts. 1-2, 1921.*
  (ii) *Report, 1921.*
  (iii) *List of Inscriptions, 1921.*
  (iv) *Amended List of Ancient Monuments, 1921.*

RANGOON. Burma Research Society, *Journal, Vol. 1, 1911, to Vol. 10, 1920.*

Malaysia.

BORNEO (SARAWAK). Sarawak Museum.

JAVA (BATAVIA). *Bataviaasch Genootschap van Kunsten en Wetenschappen,*
  (i) *Notulen van de Algemeene en Directievergaderingen, Deel 58, 1920.*
  (ii) *Tijdschrift voor Indische Taal-, Land- en Volkenkunde, Deel 59, Pts. 5, 1920, and 6, 1921; Deel 60, Pts. 1-2, 1921.*
  (iii) *Oudheidkundig Verslag, tweede, derde en vierde Kwartaal 1920, erste en tweede Kwartaal 1921.*

JAVA (BATAVIA). Commissie voor de Volkslectuur, *"Geschiedenis van Java," 1920.*

JAVA (BATAVIA). Het Algemeen Proefstation der A.V.R.O.S., Mededeelingen,
  (i) *Algemeene Serie, Pts. 10, 11 and 13, 1921, and Engl. Translation of Pt. 8, 1920.*
  (ii) *Rubberserie, Pts. 27-31, 33, 1921.*

JAVA (BATAVIA). Topografische Dienst, *Jaarverslag, 1919, Deele 1-2, (1920).*

JAVA (BUITENZORG). Department van Landbouw, Nijverheid en Handel in Nederlandsch Indië, *Mededeelingen, No. 41, 1920.*

JAVA (BUITENZORG). Jardin Botanique de Buitenzorg, *Bulletin, Ser. 3, Parts 1-3, 1921, and Index, Vol. 2.*

MALAY PENINSULA (KUALA LUMPUR). Department of Agriculture, F.M.S., *Agricultural Bulletin, Vol. 8, Pts. 3-4, 1920, Vol. 9, Pt. 1, 1921.*

MALAY PENINSULA (KUALA LUMPUR). F.M.S. Museums, *Journal, Vol. 8, Pt. 2, 1918, Vol. 9, Pt. 3, Vol. 10, Pt. 3, 1921.*

SINGAPORE. Botanic Gardens, *Bulletin, Vol. 2, No. 12, 1921.*

SINGAPORE. Raffles Museum and Library, *Report, 1919-20.*

Siam.

BANGKOK. Natural History Society of Siam, *Journal, Vol. 4, Pts. 2-3, Vol. 5, Pt. 1, 1921.*

BANGKOK. Siam Society.

BANGKOK. The Vajiranana National Library.

Indo-China.

HANOI. L'École Française de L'Extrême Orient, *Bulletin, Tome 20, Pt. 3, 1920.*

SAIGON. La Société des Études Indo-Chinoises, *Bulletin, No. 70, 1921.*

Philippine Islands.

MANILA. Bureau of Science,

(i) *Philippine Journal of Science, Vol. 17, Pts. 3-5, 1920, Vol. 18, Pts. 1-6, Vol. 19, Pts. 1-3, 1921.*
(ii) *Annual Report, 19th, 1921.*

China.

SHANGHAI. North China Branch of the Royal Asiatic Society, *Journal, Vol. 52, 1921.*

Japan.

TOKYO. Asiatic Society of Japan.

Australia.

ADELAIDE. Royal Society of South Australia, *Transactions and Proceedings, Vol. 44, 1920.*

SYDNEY. Royal Society of New South Wales, *Journal and Proceedings, Vol. 52, 1918, and Vol. 53, 1919.*

EUROPE.

Belgium.

BRUXELLES. Société Belge d'Études Coloniales.

Finland.

HELSINGFORS. Finska Vetenskaps-Societeten,
   (i) *Bidrag till Kannedom, H. 78, Pts. 2 and 5, 1920, H. 79, Pt. 1, 1919, Pt. 2, 1920, H. 80, Pts. 1-2, 1921.*
   (ii) *Ofversigt, 61c, 62a, b, 63a, b, 1921.*
   (iii) *Acta Societatis Scientiarum Fennicae, Tome 48, Pts. 5-7, Tome 49, Pts. 1-2, Tome 50, Pts. 1-2, 1919-21.*

France.

HAVRE. Société de Géographie Commerciale du Havre, *Bulletin, Vol. 37, 1920.*

MARSEILLES. Société de Géographie et d'Études Coloniales.

PARIS. Commission Archéologique de l'Indo-Chine.

PARIS. Institut Français d'Archéologie Orientale.

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The Grave-Stone of Sultan Mansur Shah of Malacca (1458-1477 A. D.)

BY J. P. MOQUETTE.

(*Translated by Dr. R. O. Winstedt from the Journal of the Batavian Society, Vol. LIX, Part 6*).

In the J. R. A. S., S. B., June 1918, pp. 47-48, Dr. R. O. Winstedt gave a description with photos of two grave-stones purporting to be from the tomb of Sultan Mansur Shah of Malacca.

It occurred to me at once that the two stones in no way matched, either in shape or ornament or workmanship. The head-stone undoubtedly once was placed on a tomb, while the other stone* belongs to the kind that lies on the ground. On all tombs and graves known to me head and foot stones correspond and it would be very strange if there were any departure from this custom at Malacca especially in the resting place of Sultan Mansur Shah. For the rest I could not learn much from the plates accompanying the article since the inscriptions, blackened for clearness, were thus made illegible.

Winstedt gave readings of the inscriptions on the head-stone and on the sides of the stone from a version procured by Mr. Blagden from Hervey (*op. cit.* p. 47).

I was certain that after the word Mansur should come the name of his father and that the date given was impossible, because (1) one word was not accounted for and (2) the Malay word *dua* seemed very strange in a purely Arabic inscription.

Fortunately I met Mr. I. H. Evans, Curator of the Taiping Museum, who promised to look up the stones for me at Singapore. Both the stones are in Raffles Museum and plaster-casts were made for me by Mr. Valentine Knight, then acting for Major Moulton the Director. Both, as shown in Dr. Winstedt's photos, are blackened. The head-stone has apparently been broken off the tomb, so that the inscription on the lowest line is damaged, and the other stone has a large round hole making the middle line of obverse and reverse illegible. As I am positive that the second stone neither came from the grave of Sultan Mansur nor from any other tomb, I shall leave it out of this discussion.

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* NOTE. The stone, in my opinion, has no historical value. Heer G. P. Rouffaer informs me that the round hole in it shows that it was used for the taking of oaths. Should the headstone belonging to it be discovered, possibly my view might not stand. [There is a stone at Pengkalan Kempas, Negri Sembilan, with a round hole in it, which tradition avers will tighten on the arm of the person who takes a false oath R. O. W.].

The head-stone is worth deciphering, because it is so far as is known the only extant stone of the tombs of the Sultans of Malacca and secondly because Mansur Shah played a great part in Malay and Chinese records.

By the help of the casts I was able to decipher the inscriptions and by reconstructing a pair of damaged words to get an absolutely certain reading of the names and of the date. Only the first line presented difficulties but by the help of my friend R. A. Dr. Husein Jaya-diningrat a reading in my opinion satisfactory was secured, so that all the words on that line with the first word of the second line duly accounted for are meant to glorify not the Sultan as in Hervey's version but the grave. Major J. C. Moulton kindly sent me at my request photos of all four sides of the stone which is now placed on a cement pedestal for its better preservation. I give my reconstruction for each side on the accompanying plates so that any one more competent than I may express his views on it.

The reading is as follows: (Plate I. obverse):

هذه الروضة المقدسة المطهرة الزاوية الصافية المنورة السطان العادل

الملک الباذل السلطا(ن) منوصو(ر) شاه بن مظفر شاه المرحوم

Plate II (Reverse) reads:—

قد انتقل من دار المحال الي دار امال يوم الا ربعا من رجب سنة

ثنتين وثمانين وثمانماية من ال (هجرة) النبو (ية) ال (مصطفوية)

Compared with the Hervey version it thus reads: *Hadzihi al-raudzat al-mukaddasat al-mutahharat al-zawiyat al-safiyat al-munawwarat lil Sultan al-adil al-badzil al-Sultan Mansur Shah bin Muzaffar Shah al-marhum*: *kad intakala min dar al-mahal ila dar amal yaum al-arbaa min Rajab sanat thanatein wa thamanin wa thaman mi'ah min al-Hijrah al-Nubawyah al-mustafawyah*
Or translated

"This is the consecrated the holy grave the brilliant illuminated tomb of the just Sultan, the magnanimous ruler Sultan Mansur Shah son of the deceased Muzaffar Shah. He removed from this mortal abode to the abode of hope on Wednesday of Rajab in the year 882 after the Hijrah of the Prophet, the Chosen One."

As my reading of the gravestone differs in many places from that of Hervey, I must add an explanation of some details. The difference in my conception of the words of the first line is great and I take it that *mim* has been broken off in the middle words, and read المطهرة (ة stands in the lower corner), but the reading is of little or no consequence since, once we know who the person entombed is, it matters relatively little if one takes a word to be in praise of the grave or of the dead. However the correct reading of the bottom line on Plate I is of very great importance for the determination of the father's name; it is now irrefragably established that we have to do with the gravestone of Sultan Mansur Shah of Malacca, who according to all accounts was a son of Sultan Muzaffar Shah. It is clear that between "Mansur" and "Muzaffar" the word بن stands, but the "r" of "Mansur" and the "n" of "Sultan" cannot be traced. Mistakes on these gravestones are very frequent so that it is quite possible the mason omitted the letters. As regards the reverse, it is clear that in the top line not *dar al-wirad* but *dar amal* occurs. More important however is the date. The cast showed at once how the faulty reading *dua* came about. The flourish of the word *min* has been mistaken for a *dal* and combined with the *wau* of the year been read دو.

In 882 A.H. the month of Rajab began on a Thursday, the 9th of October, 1477 A.D.

So following my reading one must choose between Wednesday the 7th, 14th, 21st or 28th of Rajab 882 A.H. = Wednesday the 15th, 22nd, 29th October or 5th November, 1477 A.D.

Seeing that it seldom happens that the word for "year" is omitted in dates, I have assumed it occurs on this stone and read سنة with Hervey. I must point out however that one can equally well read ستة = 6, so that the reading would run

يسم الاربعا ستة من رجب ثنتين وثمانين وثمانماية

Wednesday 6 Rajab 882 A.H. = *Tuesday* 14 October, 1477 A.D.

My emendations for the words defaced on the bottom are borne out by the legible lines and require no defence.

Hervey's reading of the side inscriptions is untenable. It is (Plate III) the beginning of a verse repeatedly found on stones in Northern Sumatra:—

انما الدنيا فنأ ليس الدنيا ثبوت
الاانما الدنيا كبيت نسجته العنكبوت

which Professor Dr. van Ronkel translated for me as follows:—

> "The world is but transitory; the world has no permanence; the world is but as a house made by a spider."

The end of this text occurred probably on the lost foot-stone and the adventures of the stone we have discussed testify to the truth of the words.

I give my best thanks to all who have been kind enough to assist me.

The Malay Pantun.

By H. Overbeck.

From the study of Malay pantuns arises the question how far this peculiar kind of quatrain is the sole property of the Malays, or if something identical, similar or akin is to be found amongst other peoples in their neighbourhood. Research would naturally turn first to Java, as both the Javanese and the Sundanese language are akin to Malay.

I do not recollect to have heard any Javanese pantuns during my stay in East Java, and J. J. de Hollander, who fully describes the Malay *pantun* and *sĕloka* (on the relationship of the two something will be said later) in his work on the Malay language,[1] does not mention any similar quatrains in his work on the Javanese language.[2] Plain love songs of course may exist, as given in chapter XIV of the "Sĕjarah Mĕlayu":—the Malay author, by the way, gives to the ditties sung in honour of Hang Tuah the name of *pantun,* though it is not a Javanese name. The word *sĕloka* is known and according to the dictionary means a figurative expression, or way of speaking with the purpose of conveying a thought in a more or less veiled form. Whether the word *sĕloka* is used also to designate moral verses as in India, I have been unable to discover. Generally speaking, Javanese poetry differs entirely from the Malay *shaër* and *pantun;* a verse similar to that of the Malay *shaër* is unknown. The Javanese poet has at his disposal ten or more different metres, the verses of which have from 4 to 12 lines, the lines being of different structure within each verse, with a rhyme hardly noticeable for a European ear, and a prosody on which the views of learned men differ. In this poetry, wherein the greater part of Javanese literature is written, there is no place for anything like the Malay *pantun.* Mention is made by some writers of the Javanese *wangsallan,* which according to the dictionary is a kind of charade or riddle in verse, wherein in an enigmatical way principally by the last, or also by the first syllable of a word something is hinted at, whilst in a second verse, called *jawab* (answer) the thing hinted is plainly stated. But I cannot give any examples of such *wangsallan* or say if there exists in Javanese any unwritten literature as in Sundanese.

Sundanese poetry generally follows the way of her Javanese sister; the Sundanese poet works with the same metres as his Javanese neighbour, and their names are identical in both languages. But besides the written literature there is the *pantun,* which in Sundanese means a tale taken from legends or from the history of old times, half sung, half recited by the bard, the *tukang pantun*, to the accompaniment of a sort of violin (*tarawangsa*) or lute (*kachapi*). Mr. C. Pleyte has edited some of these Sundanese *pantun* with their different versions, together with a synopsis, a partial translation and a glossary.[1] Although these tales are taken mostly from legends or history of old times, they resemble the Malay *pĕnglipor lara* tale, being also interspersed with blank verse and *sindir*.

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[1] F. J. de Hollander, Handleiding tot de Kennis der Maleische Taal-en Letter Kunde, Breda, 1845, p. 150.

[2] F. J. de Hollander, *ib.* 1848.

The blank verse Mr. Pleyte calls *purwakanti*, a Javanese word which according to the dictionary means "a verse or verses, being a combination of words having the same sound, which sometimes are not much more than jingling nonsense." These blank verse, often roughly humoristic, describe the proceedings of a festival, the dress of a man or woman, their way of walking or journeying and so on and they are often repeated. Without being quite identical with the blank verse of the Malay *pĕnglipor lara* tale, they have the same metre and quaintly resemble them in their way of being used. An attempt at a translation would be pretty hopeless for anybody but a Rabelais; they abound in onomatopoeics and synonyms, in which the Sundanese language is exceedingly rich.

As regards the *sindir* appearing in the *pantun* edited by him, Mr. Pleyte in the preface to the glossary writes as follows:

> "To Mr. J. Knebel . . . is due the credit of having "pointed out the nature of the Javanese *wangsallan*, i.e. "charades, of which the beginning lines give the rhyme-word "for the solution given in the following lines. So too, many "of *sindir*, are something more than simple rhymes, which "they are always represented to be. They contain hidden "warnings, lessons of life, admonitions and so on clad in the "garment of a play upon words or a pun, sometimes more, "sometimes less ingenious, as will be seen from the examples "in the text.
>
> "Attention ought to be drawn to this, not only because "without such knowledge some passages in the *pantun* would "remain unintelligible, but also because the *sindir* are so closely "interwoven with daily conversation, that a fairly animated "colloquy seldom passes without the use of these puns, which "are understood everywhere. They season discourse as quotations "season ours, and for an intimate chat one ought to "know at least some of them. Also for easy intercourse with "the *kampong* people they are indispensable, as they are the "common property of the *chachah*, the common people, as "well as of the highest educated class.
>
> "A few examples may serve as illustrations.

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[1] Batavia, 1906, 1910, 1911 in the Tijdschrift voor Indische Taal, Land en Volken Kunde, Part XLIX, afl. 152, and in Verhandelingen van het Bataviaasch genootschap van Kunsten en Wetenschapen, Part LVIII.

"In a native household a new servant is to be engaged. "A candidate has offered his services, makes a good im"pression and is therefore accepted, say, with the following "words: '*Tapi hantö salisung gardu, ĕnya.*' '*Akh, "moäl,*' 'Oh no!' is the reply. As the first sentence, liter"ally translated, means 'but not a watch-house-mortar (for "rice-pounding),' the question arises as to what has actually "been said to the man.

"Under *salisung gardu* is to be understood the *sahkokol,* "i.e. 'a sounding-board' hanging in the watch house, where"on the hours are struck and wherewith the watchmen also "give alarm-signals. Even then it has no meaning here. "But the meaning will become clear if one knows that the "catch-word or rhyme-word on *sahkokol* is *sakongkol,* i.e. "'gossiping,' and we therefore get the following: *hĕntö sali"sung gardu* = *hĕntö sakahkol* = *ulah sakongkol*—'no gossip!'

"Not only in the presence of grown-up people are such "covert sayings used; they are addressed also to children. A "naughty child has repeatedly been bidden to obey, but re"mains obstinate. At last the mother loses her temper and "exclaims angrily: '*Ah, sia mah sok kökök aing mah; mun "kitu, mĕntak mĕntil hiris ngĕmbang bĕdil:*'—'Well, you put "your will against mine; if you persist, it will be *mĕntil hiris "ngĕmbang bĕdil.*'

"*Mĕntil hiris*[1] means *kĕpokan,*[2] and the naughty one is "made to understand *matak kapok,* in other words, 'It will "not be long before you will be *kapok.* i.e. you will come to "grief, which will so frighten you that you will not do it "again, and then it will be *ngĕmbang bĕdil,*[3]—*obat,* which "means here *totobatan,* 'I shan't do it again.'

"But the *sindir* are by no means always of a moral ten"dency, and least of all in the allegorical language of courting, "wherein they play an important part and often show an un"mistakable ingenuity. For example.

(*Puchung* metre).

Jaring panjang aya-na di-parahu

Tö puguh kahayang

Bengkel kawung chumawene
Diyuk nangtung barang tĕda hĕntö ngönah.

"Which means literally translated.

'A long net is lying in the ship,

Foolish is the desire.

Tapping-peduncle of a virginal arenga-palm,
Whether one sits or stands up, one does not enjoy one's meal.'

---

[1] i.e. the *hiris* (a kind of pulse) is forming the first fruit after flowering.

[2] i.e. a very young fruit.

[3] i.e. the flowering of a gun.

"These lines, taken literally, form an entirely meaning-"less combination. The following is the solution.

"*Jaring panjang* could be expressed by one word *mayang* "'a drag-net.' Under 'lying in a ship' one should under-"stand 'in the house.' *Mayang* is not used in this, but in "another of its meanings, i.e. 'the blossom of the betel-"palm'—a marriageable maiden.

"The second line contains a question to be rendered as "follows: would it be too foolish to desire you?

"*Bengkel kawung chumawene* again is a paraphrase. "Instead of *bengkel*, 'tapping-peduncle of a sugar-palm,' one "should take the synonym *jönah,* suggested by the rhyme-"word *ngönah. Kawung chumawene* means 'a virginal, i.e. "not yet tapped Arenga saccharifera,' the word *chumawene,* "'to be a virgin,' being a form of *chawene* 'virgin.' Now, "as an incarnation of *Nyi Pohachi Sanghyang Sĕri,* the "primitive goddess of agriculture, the *kawung*-palm is con-"sidered as a female being, who from earliest youth, until "the palmwine-tapper marries her when she is grown up, is "deemed to go through all stages of development from a little "girl to a marriageable maid.[1] *Bengkel kawung chumawene* "therefore means: 'a just budding virgin.'

"The last line does not need further explanation, and it "will be clear that the whole is a lover's entreaty.

"However, *sindir* are rarely as intricate as the above. "The plainness of the following lampoon on divorced women, "leaves nothing to be desired:

"*Anak kuda susurian*
"*Tikait tali kanchana*
"*Aya rangda sösörian*
"*Ngarĕbut ösi chalana.*"[2]

In the texts edited by Mr. Pleyte *sindir* in versified form are not used as *pantun* are used in a Malay Hikayat, i.e. to form dialogues and so on, but occur apparently mixed up with the blank verse, which have the same metre as the last verse quoted above. The *puchung*-metre of the first *sindir*-verse given above is a four-lined one of the different metres at the Sundanese poet's disposal, already referred to. Whether *sindir*-verses occur also in metres having more than four lines, Mr. Pleyte does not say, though elsewhere he speaks of *sindir n* as 'four-lined love-songs.'

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[1] Cp. C. Pleyte *Jockang sadap* in Bijdragen tot Taal-Land en Volkenk. v. Ned. Indie, 7 volgr, dl V, p. 591.

[2] A literal Malay translation would be

Anak kuda bĕrbulu tĕngkok
Tĕrkait tali kĕnchana.
Ada janda tĕrsĕnyum-sĕnyum
Mĕrĕbut isi chĕlana.

As regards the Dayaks of Borneo, Gomes[1] mentions several kinds of songs often to be heard amongst the people, but he does not give any texts from which one can draw conclusions.

From the Philippines I have been unable so far to obtain any information.

In the Buddhist literature of Siam and Burma Pali verse sometimes comes very near the structure of the *pantun,* as pointed out by Marsden and summed up by Wilkinson—"the first pair of lines should represent a poetic thought with its beauty veiled, whilst the second pair should give the same thought in all its unveiled beauty." Marsden writes:—"The first two lines of the quatrain are figurative, containing sometimes one, but oftener two unconnected images, whilst the latter two are moral, sentimental or amorous and we are led to expect that they should exemplify and constitute the application of the figurative part. They do so in some few instances." "Dhammapada" or "Way of Truth," a collection of Buddhist verses, contains many quatrains in which the first couplet contains a picture, the meaning of which is applied in the second:

"As into a house, which is badly thatched,
The rain will enter.
Thus into an untrained mind
The craving will enter.

or

"As a beautiful flower,
Brilliant of hue but yielding no fragrance,
Thus is the well-spoken word
Fruitless to him, who does not act (accordingly)."

Without the "as" (*vatha*) and "thus" (*evam*) there would not be much difference between these Pali verses and many a Malay *pantun.*

Pali is a daughter-language of Sanskrit, and in Sanskrit poetry "by far the most frequent and most useful form of verse" is the Sloka.[2] The Sloka consists of two lines of sixteen syllables, or rather four lines of eight syllables each, only four of which are fixed in quantity, the others being at option long or short.[3] Of the Slokas in the Sanskrit Ramayana some in the first two lines have a picture or poetic thought, whose meaning is applied in the second couplet. The following quatrains are translated by Romesh Chandra Dutt in his condensation of the Ramayana, book IX, Canto 9,

"Raindrops fall upon the lotus,
But unmingling hang apart;
False relations round us gather,
But they blend not heart with heart."

---

[1] E. H. Gomes, Seventeen years amongst the Sea-Dayaks of Borneo.

[2] Ralph J. H. Griffith, The Ramayana of Valmiki, Benares 1895, p. VIII quoting from Wilson's Sanskrit Grammar, p. 436.

[3] *ib.*

"Winter-clouds are big with thunder,
But they yield no freshening rain;
False relations smile and greet us,
But their soothing words are vain."

"Bees are tempted by the honey,
But from flower to flower they range;
False relations share our favours
But in secret seek a change.—"

With these verses Ravan reproaches his brother Bibishan, who had given him advice not much to the Raksha-king's liking, but they quaintly resemble *pantuns* wherewith a Malay girl rebukes a faithless lover.

Kalidasa, who lived probably in the fifth century of the Christian era, the greatest of the later Sanskrit poets, has generously interspersed the prose of his dramas with lyric and descriptive stanzas. The following quotations are taken from Arthur W. Ryder's translation of "Shakuntala" in "Everyman's Library."

Act. IV, 2. King Dushyanta, owing to the curse of the Rishi Durvasas, has entirely forgotten that he had married Shakuntala, and her foster-father, the hermit Kanva, decides to send her to the King's palace. One of his pupils on the dawn of the day of her departure, says:

"Night-blooming lilies, when the moon is hidden,
Have naught but memories of beauty left;
Hard, hard to bear! Her lot, whom heaven has bidden
To live alone, of love and lover reft!"—

Act V. When the hermits, who bring Shakuntala to the palace, are received by the king, one of them says:

"Fruit-laden trees bend down to earth,
The water-pregnant cloud hangs low;
Good men are not puffed by power;
The unselfish are by nature so."

When Shakuntala reminds him of his former kindness and promises, the king replies:

"A stream, that eats away the bank,
Grows foul and undermines the tree;
So you would stain your honour, while
You plunge me into misery."

And when the hermits reproach him, the king reminds them of the verse:—

"Night blossoms open to the moon,
Day-blossoms to the sun;
A man of honour ever strives
Another's wife to shun."

The use of verse, especially of some well-known epigrammatical sloka, to illustrate one's words, is of course common in Indian literature and probably in daily conversation, but in the king's reply to Shakuntala, if correctly translated, we have an ex tempore improvisation to suit the occasion.

With Sanskrit we are in India, and India of course has greatly influenced the Malay language and literature. "Negĕri Kĕling," the country of the dark people of the Kalingas, mentioned in the Ramayana and Mahabharata as living on the East-coast of the Indian peninsula, would seem to be the source of this influence. Tamil is a Dravidian, non-Aryan language, but has been influenced largely by Sanskrit. The Ramayana, the Mahabharata, the Panchatantra have been translated into Tamil. From the Tamil translation of the Ramayana the Malay *Hikayat Sĕri Rama* is derived. Speaking of the different kinds of Tamil poetry, the Abbe Dubois[1] mentions the "Padam," which corresponds to strophe, stanza or couplet. The "Padam" includes not only odes in honour of gods, princes and great personages, but also obscene and amorous ditties, sprightly dialogues between gods and goddesses and similar compositions. Dubois[2] further mentions Slokas or stanzas, and gives translations of a number of "niti-slokas" or moral stanzas, familiar to all educated Hindus. "They are written in Sanskrit-verse, but as this classical language is not understood by many people, each sloka is accompanied by a literal translation in the vulgar tongue. The Hindoos take great delight in introducing these slokas into their ordinary conversation." Many of these slokas, of which Dubois gives a prose-translation, have in their first part a picture or saying, whose moral is given in the last part. For instance.

> "*When one sees blades of Dharba-grass[3] on white-ant-heaps, one can tell at once that snakes are there. So when one sees anybody frequenting the company of wicked men, one may feel sure that he is as wicked as they.*"

Perhaps Sanskrit scholars can tell us how it came that the word sloka, which appears to have been formerly the name of a metre or stanza, later came to mean an epigram.

The Malays, too, know the word *sĕloka.* According to Wilkinson's dictionary it means "rhyme, especially when humorous; ironical or satirical poetry when not in the form of the *pantun.*" A *pantun,* according to the same dictionary, is a "quatrain, the first line of which rhymes with the third, and the second with the fourth." Mr. Wilkinson has further laid down the principle of assonance and that of the veiled and unveiled thought referred to above. That the principle of assonance is not always kept, a glance over any collection of pantuns will show. The veiled and unveiled thought also occurs in many Indian selokas. As regards the rhyme the Malays seem to be rather careless, and a pantun may sometimes have the same rhyme in all four lines:

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[1] Abbe J. A. Dubois, Hindu Manners, Custom and Ceremonies, 3rd ed., Oxford, 1906, p. 619.

[2] Dubois chapter XXII, page 392 et seq. and chapter XXIII, page 474 et seq.

[3] The sacred grass, *Poa cynosuroides,* essential in all sacrifices.

Masok hutan bawa sĕnapang
Hĕndak bĕdil anak bĕruang.
Ĕnche' laksana binatang kongkang
Kĕpala di-tundok chĕlah kangkang.[1]

Ada satu panglima garang
Janggut panjang misai bĕrchabang.
Pokok pisang boleh tuan tĕbang
Ka-pada sahaya jangan di-chadang.[2]

Marsden, Crawford and others make no distinction between *pantun* and *sĕloka.* J. J. de Hollander, however, remarks that in Malay writings a distinction is made and quotes a passage from the *Hikayat Shah Mardan* or *Indĕra Jaya*:—"*sĕgala dayang pun bĕrpantun dan bĕrsĕloka.*" In the *Hikayat Hang Tuah* we are told of Hang Tuah and his friends, when they were in the forbidden park of the Batara of Mĕnjapahit:—"*maka ia dudok.... bĕrsĕnda, bĕrnyanyi dan bĕrpantun dan bĕrsĕloka bĕrbagai-bagai ragam-nya.*" The word *pantun* has in the *Hikayat Hang Tuah* a double meaning: it is used several times for such a proverbial saying as *pagar makan padi*, as pointed out by Dr. Winstedt in his preface to "Pantun Mĕlayu," and it is used also for the quatrain.

In my collection of *pantuns* I find the following quatrains:—

Sabar sunggoh Raja Kuantan,
Mĕngikut pĕrang dari kuala.
Adinda tuan sa-pantun intan,
Tidak tĕrnilai yang punya harga.

Panah mĕmanah Raja Andoman,
Panah lalu ka-sĕgara.
Adinda sa-pantun sharbat minuman,
Sa-puloh tahun ta' hilang rasa.

Ya Galoh Raden di-pinang,
Tempat raja dari Patani;
Tuan sa-pantun si-pohon pisang,
Kawan-nya banyak kanan dan kiri.

These three quatrains belong to an incomplete series of pantuns of the kind called *Alif-ba-ta.* The series was procured from a Chinese collector and probably hails from Malacca. In these quatrains the word *pantun* or *sa-pantun* is used in place of the *laksana* or *sa-umpama* of modern times. Is it possible that the *sĕloka,* either with the alternate or the fourfold rhyme, existed long ago and that those quatrains containing a *pantun* or simile in the first two lines have in course of time received the name *pantun* in

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1. Pantun Melayu No. 970.
2. *ib.* No. 1021. Compare further the pantuns in "Pelandok Jenaka."

contradistinction to the *sĕloka,* in which the same thought runs through all four lines? The following quatrains would then be called *sĕloka*:

Anak dara dua sa-pasang,
Pakai baju, pakai kĕrosang,
Sa-biji nanas, sa-biji pisang,
Belum tahu rĕzĕki musang.[1]

Sudah bĕrtĕmu kaseh sayang,
Dudok tĕrkurong malam siang,
Hingga sa-tapak tiada rĕnggang,
Tulang sĕndi habis bĕrgunchang.[2]

Chakapan pelet orang Pĕtani,
Mari ka-tanjong hĕndak mĕmbĕli,
Bodoh kurang paham hĕrti,
Kambĕli di-kata pĕrmaidani.[3]

Jalan-jalan sa-panjang jalan,
Singgah-mĕnyinggah di-pagar orang,
Pura-pura mĕnchari ayam,
Ekor mata di-anak orang.[4]

The verse of the *sĕloka* would be the usual *shaër* verse, which in its turn is possibly the old Indian sloka or stanza. A study of such *sĕloka* would probably show that the principle of the fourfold rhyme is not always strictly observed. Whoever has read a Malay *shaër*, knows the awful difficulties the Malay poet has to master to get the fourfold rhyme, a difficulty which would make the popular use of such a quatrain rather impossible. When the *pantun* became popular, the double thought in it possibly caused the alternate rhyme, which is much easier to find.

A collection called "Shaër Pantun Sĕloka" has been published in Singapore by the Malay press. It contains a number of series of *pantun bĕrkait,* but I have failed to find any essential difference between the quatrains of this collection and the usual *pantun.*

Something which seems akin to the Malay *pantun* is to be found in the Chinese language. When trying to read the "Kin Ku K'i Kuan," "Stories of old and new times," the well-known collection of 40 Chinese novels dating from the Ming dynasty (1368—1644 A.D.) I came across some Chinese verses interspersed in the text which even to my imperfect knowledge of Chinese seemed to be on the lines of a *pantun.* Grube in his "Geschichte der Chinesischen Literatur" quotes from the preface of V. von Strauss's translation of the "Shi-King," "The Book of Odes," one of the four classical books of Chinese literature, as follows:

> "The Chinese editors always indicate at the end of each
> "stanza whether it contains a direct statement (*fu*) a simile
> "or comparison (*pi*) or a metaphor or symbolical saying
> "(*hsing*). Only the latter is something peculiar, as in each
> "stanza, before coming to the real object of the poem, in one
> "or two lines a peculiar natural phenomenon, a well-known
> "event or occurrence is mentioned as an introduction not un-
> "like a clever arabesque in order to prepare reflection, sensa-

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[1] "Pantun Melayu," No. 8.
[2] *ib.* No. 951.
[3] *ib.* No. 975.
[4] *ib.* No. 955.

"tion and the state of mind for that which follows. The "symbol is either the same in all stanzas, or a new one is "taken each time. Thus we find in the symbolical introduc-"tion of different poems absolutely independent from each "other the same picture or metaphor."

The few examples given below are taken from the few pretty, but rather free translations in the little volume, "The Book of Odes" in the "Wisdom of the East" Series. The number refers to the usual Chinese edition in four volumes, from which the indications at the end of each stanza also have been taken. For two of them the writer has added the Chinese text in modern Mandarin dialect, which however does not always correspond with the sound of the words at the time the poems were written.

(I, III, 2). Brave Thoughts.	Chinese text.
Green is the upper robe,	*Yüan*^{2} *hsi*^{1} *i*^{1} *hsi*^{1}
Green with a yellow lining;	*Yüan*^{2} *i*^{1} *huang*^{2} *li*^{3}
My sorrow none can probe,	*Hsin*^{1} *chih*^{1} *yu*^{1} *i*^{3}
Nor can I cease repining.	*He*^{2} *wei*^{2} *ch'i*^{2} *i*^{3}.
(Styled *pi*).	
Green is the upper robe,	*Yüan*^{2} *hsi*^{1} *i*^{1} *hsi*^{1} (same as in first stanza)
The lower garb is yellow;	*Yüan*^{2} *i*^{1} *huang*^{2} *shang*^{1}
My sorrow none can probe,	*Hsin*^{1} *chih*^{1} *yu*^{1} *i*^{3} (same as in first stanza)
Nor any season mellow.	*He*^{2} *wei*^{2} *ch'i*^{2} *wang*^{2}.
(Styled *pi*).	
The silk was of emerald dye;	*Yüan*^{2} *hsi*^{1} *szŭ*^{1} *hsi*^{1}
Ah, this was all your doing;	*Nü*^{3} *so*^{3} *chih*^{4} *hsi*^{1}
But I dream of an age gone by,	*Wo*^{3} *szŭ*^{1} *ku*^{3} *jên*^{2}
To keep my heart from rueing.	*Pi*^{4} *wu*^{2} *yu*^{2} *hsi*^{1}.
(Styled *pi*).	
Fine linen or coarse, 'tis cold.	*Ch'ih*^{1} *hsi*^{1} *hsi*^{4} *hsi*^{1}
But all I have to dress me;	*Ch'i*^{1} *ch'i*^{2} *i*^{3} *feng*^{1}
So I think of men of old	*Wo*^{3} *szŭ*^{1} *ku*^{3} *jên*^{2} (same as in third stanza)
And find brave thoughts possess me.	*Shih*$^{2-4}$ *huo*^{4} *wo*^{3} *hsin*^{4}.
(Styled *pi*).	

(III, VII, 5). The Slanderers.	Chinese text.
The blue flies buzz upon the wing,	*Ying*^{2} *ying*^{2} *ch'ing*^{1} *ying*^{2}
From fence to fence they wander;	*Chih*^{3} *yü*^{2} *fan*^{2}
O happy king! O courteous king!	*Cr'i*^{3} *ti*^{4} *chün*^{1} *yü*^{2}
Give heed to no man's slander!	*Wu*^{2} *hsin*^{4} *t'san*^{2} *yüan*^{2}.
(Styled *fu*).	
The noisy blue flies rumble round,	*Ying*^{2} *ying*^{2} *ch'ing*^{1} *ying*^{1} (same as in first stanza)

Upon the gumtrees lighting;	*Chih^3 yü^2 chi^4*
A tongue of evil has no bound	*T'san^1 jên^2 wang^3 chi$^{2-4}$*
And sets the realm a-fighting.	*Chiao^1 luan^4 szŭ^4 kuo^2*
(Styled *hsing*).	
The clumsy blue flies buzzing round	*Ying^2 ying^2 ch'ing^1 ying^2* (same as in first stanza)
Upon the hazels blunder;	*Chih^3 yü^2 chên^1*
O cursed tongue that knows no bound	*T'san^1 jên^2 wang^3 chi^{24}*
And sets us two asunder.	*Kou^4 wo^3 er^4 jên^2.* (same as in second stanza)
(Styled *hsing*).	

A wife's Memories. (I, V, 5).
With taper rod of tall bamboo
You angle in the K'e;
Do I not go by dream to you,
Who cannot come to me?
(Styled *fu*).

To left the T'seuen waters roam,
The K'e flows to the right;
Ah! never gleams a newer home
Like that lost home to sight.
(Styled *fu*).

Leftward the T'seuen stream beguiles,
And rightward calls the K'e;
Return, o light of happy smiles
And girdle-gems, to me!
(Styled *fu*).

The oars of cedar rise and fall
From boats of yellow pine;
Would I might roam the banks, where all
The ghosts of girlhood shine!
(Styled *fu*).

Happy in Haou. (III, VII, 7).
Fishes are there by the score, I trow,
Their large heads sleepily showing;
The king is here, in the city of Haou,
At ease with the wine-cup's flowing.
(Styled *hsing*).

Fishes are there in the weed enow, (in the Chinese text same as in first stanza)
Their long tails lazily swaying;
The king is here, in the city of Haou,
Drinking, dreaming, delaying.
(Styled *hsing*).

The fish lie under the willow-bough (in the Chinese text
same as in first stanza)
That leans and shadows the rushes;
The king is here in the city of Haou,
At peace, and the wine-cup flushes.

(Styled *hsing*).

May-time. (I, II, 12).

Deep in the grass there lies a dead gazelle;
The tall white grass enwraps her where she fell.—
With sweet thought natural to spring
A pretty girl goes wandering
With lover that would lead astray.

(Styled *hsing*).

The little dwarf oak hides a leafy dell;
Far in the wilds there lies a dead gazelle;
The tall, white grass enwraps her where she fell.—
And beauty, like a gem, does fling
Bright radiance through the blinds of spring.

(Styled *hsing*).

"Ah, gently! do not disarray
My kerchief! Gently, pray!
Nor make the watch-dog bark
Under my lattice dark!"[1]

(Styled *fu*).

Even these very free translations will show the *pantun*-like style of some of the oldest Chinese poems.

In the preface to the "Lute of Jade," a selection from later classical Chinese poets in the same "Wisdom of the East" series, L. Cranmer-Byng says: "Concentration and suggestion are the two essentials of Chinese poetry. There is neither Iliad nor Odyssey to be found in the libraries of the Chinese; indeed, a favourite feature of their verse is the "stop short," a poem containing only four lines, concerning which another critic has explained that only the words stop, whilst the sense goes on. But what a world of meaning is to be found between four lines! Often a door is opened, a curtain is drawn aside in the halls of romance, where the reader may roam at will." As regards the rhyme, the same author says: "in the four-line or stop-short poem . . . the first line rhymes with the second and fourth, curiously recalling the Rubayat-form of the Persian poets." It is difficult to find one of these stop-short poems from the translations given in the "Lute of Jade," as probably the English version does not follow the Chinese metre. There is one from Po Chü I (A.D. 772—846):

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[1] The stanza of the Chinese original have 4, 4, and 3 lines respectively

A Palace Story.

"*A network handkerchief contains no tear.*
'Tis dawn at court, ere wine and music sate.
The rich red crops no aftermath await.
Rest on a screen, and you will fall, I fear."—

In the above-named "Kin Ku K'i Kuan," verses similar to the epigrammatical *sĕloka* or to the *pantun* are used much in the same way as similar verses are used in Indian literature, at the beginning, in the middle and at the end. Perhaps Chinese scholars can tell us whether there are quatrains of a similar kind used in daily life as the *pantun* is used in Malaya. Chinese literature is a bad collecting-ground for popular ditties, on which university literates look down with even more contempt than they already do on the popular novel, the "Hsiao Shuo."

It seems rather far out of the way to look for something akin to the Malay *pantun* in Chinese poetry, but between the two languages there is a certain affinity in idiom. Common to both languages are the "classifiers," certain words used in addition to the numeral, different according to the class of objects referred to, as in Malay *ekor*, 'tail' for animals, *buah* 'fruit,' for countries, houses, ships and so on. No such classifiers are to be found in the Javanese or Sundanese language. In one of his lectures on "Language and Letters" Dr. Graebner drew a comparison between Arabic as a most subjective and Chinese as a most objective language. The Chinese, he said amongst other things, in expressing himself, shows us a picture, a sort of cinematographic film, which he has before his mind's eye and which he describes and explains to us by degrees. Hence the usual co-ordination instead of our subordination of sentences, hence the frequent use of the possessive and of the demonstrative pronoun, and hence possibly the use of the classifiers. All these characteristics are to be found also more or less in the Malay idiom. The co-ordination of sentences is much more frequent than subordination, the possessive suffix *-nya* is to be found in nearly every sentence, and the demonstrative pronouns *ini, itu* and *pun* are used much more frequently than in any European language, and much in the same way as in Chinese.

Is it possible that to Chinese influence may be attributed the fact that the connection between the first and last couplet in the Malay *pantun* is often so very loose?

In the Indian sloka, to judge from translations, the rule that the picture given in the first lines must absolutely agree with the thought conveyed in the second lines, is always strictly observed. In all Indian verses the picture is quite clear; it is always an obvious illustration of the thought which follows and not merely as in the Malay *pantun* an impressionist sketch, whose connection with the following lines a European mind often fails to understand. In Chinese poetry we have just this very looseness of connection between the picture and the thought it illustrates. A literal translation of course would make this point much clearer than the verses quoted above, but even some of these, translated into Malay, would not be much out of the way in a Pantun. In the noisy blue-bottles and the slanderers, in the lazy fishes and the king feasting at Haou we have pictures and thoughts, which a European mind can as well connect as the picture of the creeper that winds round the tree and the thought of the snake that coils round the flower in the pantuns of the "Guarded Rose."[1] But in "May-time" the first lines are of that class which, to use Dr. Winstedt's expression, "sound inane enough on a gramophone-record, but may well have given the spirit of the hour and place of its original context." Parallels for the green upper robe and yellow lower robe could be found in many *pantun.*

The points of resemblance between many Chinese verses and Malay *pantun* appear to be so numerous and so close that the thought of fortuitous coincidence seems hardly satisfactory. Perhaps Chinese scholars could help us to fathom the meaning of the introductory lines in many a Chinese verse and their inner connection with the following lines in the same way as Dr. Winstedt has done for the *pantun* in his preface to "Pantun Mĕlayu."

I once went through my collection of *pantun* with a clever Malay munshi from Sumatra and learned something about the meaning of the second lines, but very little of their connection with the first pair. The munshi indeed declared the first couplets to be meaningless, and observing my apparent incredulity, pointed triumphantly to the passage in the "Pĕlayaran Abdullah:"

> "*Ada pun jalan sĕgala pantun itu ĕmpat-ĕmpat mistar adanya; bĕrmula mistar yang di-atas dua itu, tiada ĕrti-nya, mĕlainkan ia-itu mĕnjadi pasang-nya sahaja; maka yang dua mistar di-bawah, itu-lah yang ada bĕrĕrti, ada-nya.*"

Mĕnjadi pasang-nya the munshi declared to mean that they were only there "to carry the rhyme." Undoubtedly there is a grain of truth in Abdullah's statement, at least as far as modern Malays and *pantuns* are concerned. A glance over the quatrains of "Pantun Mĕlayu" will show that the principle of assonance is frequently dispensed with, and as regards the "veiled and unveiled thought" I would venture to add the "compulsion of rhyme" to the long list of explanations enumerated by Dr. Winstedt to solve the difficulties of the European student when he meets with an apparently meaningless first pair of lines.

"Out of a big repertory of old-world verses the singer chooses one suitable for the purpose or possibly invents a new verse or changes and adapts an old." "Favourite quatrains have undergone a little Odyssey of adventure up and down the Malay Archipelago."[2] The real meaning of a *pantun* lies in the second coup-

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1. Pantun Melayu, Nos. 306-313.
2. From the preface to "Pantun Melayu."

let; what the singer wants to say, he expresses in the second couplet, and apparently the second couplet lingers in the memory of the Malay much stronger than the first. When hearing extemporised *pantun,* I have often noticed that the singer has fixed in his mind only the last couplet and improvises the first simply to get the rhyme, without paying any attention to principles of assonance and veiled thought. If he finds in his momentary surroundings or occupation a motive for the rhyme he needs, he will seize it at once. Again any adept in *pantun* has at his command a large number of rhyme-equivalents which will enable him to construct at a moment's notice the first couplet that gives the rhyme for the second, and even to do it in a neat style, giving a nice little picture, which however has hardly any inner connection with the thought expressed in the second couplet. Sometimes he simply alters a stock-phrase just to get at the rhyme. The choice of fruits put by the extemporiser into a *puan* or *dulang* very often seems to be determined solely by the rhyme, and so too the use of stock-phrases *dari....bělayar ka...., orang....pulang ka....; kalau tuan pěrgi ka....., charikan sahaya.*

Below are given some quatrains taken from *Pantun Mělayu, Pantun Dondang Sayang* and my own collection, in which the third and fourth lines are quite or very nearly identical, whilst the first two lines differ more or less. Sometimes the rhyme-words still linger in the singer's memory, and sometimes the principle of assonance makes itself felt vaguely. These examples may serve to illustrate the working of the Malay *pantun*-singer. Experts perhaps will be able to discriminate between the work of the poet and that of the plagiarist.

Kumbang těrbang kěliling kota,	*Zamzam tělaga ada di-Měkah,*
Makan rukam sa-pokok habis;	*Minum orang anak si-Ali;*
Adinda jangan bimbang ta' suka,	*Adinda jangan bimbang ta' suka,*
Ambil kěris tikam sa-kali.	*Ambil kěris tikam sa-kali.*

Yu puteh si-lumba-lumba,	*Jin běsar turun běrtapa,*
Lalu běrěnang ka-Tanjong Jati.	*Makan sa-hari sa-gantang padi;*
Anak sungai kalau ku-tuba,	*Anak sungai kalau ku-tuba,*
Lotong siamang jatoh mati.	*Lotong siamang jatoh mati.*

Baik-baik tuan měngikat;	*Ada suatu Haji Tambi,*
Anak balam těrbang tinggi;	*Běrjumpa kolam turun mandi;*
Baik-baik tuan měnyurat,	*Baik-baik tuan měnulis*
Kalam jangan buat pěnyugi.	*Kalam jangan buat pěnyugi.*

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4. *Ib.* No. 900.

Layang-layang tĕrbang mĕlayang,
Sayang sĕrai dalam chĕrana;
Bidadari turun mĕlayang
Nantikan sore bulan pĕrnama.

Tĕtak mayang sĕludang mayang,
Ĕmas urai di-dalam chĕrana;
Bidadari turun mĕlayang,
Nantikan sore bulan pĕrnama.

Mayang tĕrĕndam di-pusat tasek,
Pusat tasek tumboh chĕndawan;
Bintang mĕrindu chĕndĕrawaseh,
Chĕndĕrawaseh burong di-awan.

Sĕri Rama raja di-Tasek,
Sayang tasek tumboh chĕndawan;
Bintang mĕrindu chĕndĕrawaseh,
Chĕndĕrawaseh burong di-awan.

Zaman tatkala raja di-Kĕlang,
Tali di-ukur dĕngan gĕlang;
Budi sĕdikit bila-kah hilang,
Sudah sĕrap di-dalam tulang.

Kalau tuan pĕrgi ka-Gĕlang,
Pĕsan sahaya limau lĕlang;
Budi sĕdikit bila-kah hilang,
Sudah sĕrap di-dalam tulang.

Ramai bĕrkahwin raja Kĕlang,
Pakai dokoh dĕngan gĕlang;
Budi baik mana 'nak hilang,
Mĕsĕra sampai ka-dalam tulang.

Kalau kĕrja raja di-Kĕlang,
Pakai kĕbaya sama gĕlang;
Budi sĕdikit bila-kah hilang,
Bĕrsĕrap sampai ka-dalam tulang.

Pagar sahaya pagar kĕliling,
Pokok kara-kara tiada mulia;
Chaching bĕrtapa lautan kĕring,
Bila-kah boleh mĕnjadi naga?

Ada suatu Pĕnglima Gading.
Masok ka-hulu hĕndak mĕnjaga;
Chaching bĕrtapa lautan kĕring,
Bila-kah boleh mĕnjadi naga?

Dari pauh singgah pĕmatang,
Singgah mĕrapat papan kĕmudi;
Dari jauh sahaya datang,
Karna tuan baik budi.

Bĕrapa jauh tanah Palembang,
Burong tĕrbang pulang hari;
Dari jauh sahaya datang,
Dĕngarkan tuan baik budi.

Acheh bĕrpĕrang ka-Bangka Hulu
Sĕri Paduka pĕnglima-nya;
Diam tuan sabar dahulu,
Ada masa kĕtika-nya.

Si Langsat anjing pĕmburu,
Rusa sa-kawan di-adang-nya;
Diam tuan sabar dahulu
Ada masa kĕtika-nya.

Buah bachang sa-tangkai lĕbat,
Mari taroh di-dalam gĕdong;
Dua di-panching, satu ta' dapat
Baik bĕraleh ka-tĕmpat yang lain.

Putek machang sa-tangkai lĕbat,
Enche' Salleh bĕrkĕdai kain;
Dua di-panching, satu ta' dapat
Ikan bĕraleh di-tĕmpat lain.

Pinjamkan sahaya si-pisau raut,
Hĕndak mĕraut bingkai tudong;
Gila apa ikan di-laut,
Mĕlihat umpan di-atas gunong.

Pisau wali buat pĕraut,
Chamcha jatoh patah bĕrdĕngong;
Gila latah ikan di-laut
Mĕlihat umpan di-atas gunong.

Harap harap kĕlapa puan,
Tidak puan kĕlapa Bali;
Harap hati ka-pada nan tuan,
Tidak tuan, siapa lagi?

Puan kĕlapa puan,
Kĕtiga dĕngan kĕlapa Bali;
Harap hati ka-pada tuan,
Tidak tuan, siapa lagi?

Limau manis di-tĕpi pĕrigi,
Lĕbat buah di-hujong dahan;
Harimau garang, kuku-nya bĕsi,
Di-berak tiong mati bĕragan.

Yang mana sĕrang mana kĕlasi?
Mana satu jadi juragan?
Harimau garang, kuku-nya bĕsi,
Di-berak tiong mati bĕragan.

Ada suatu anak kĕlasi,
Baharu sĕkarang mĕnjadi juragan;
Harimau garang, kuku-nya bĕsi,
Di-berak tiong mati bĕragan.

Limau purut limau lĕlang,
Masak sa-biji di-pangkal Rama;
Harimau mati tinggalkan bĕlang,
Manusia mati tinggalkan nama.

Anak Mĕlayu pakai sĕlendang,
Singgah pĕtek buah dĕlima;
Harimau mati tinggalkan bĕlang
Orang mati tinggalkan nama.

Anak babi dari kuala,
Mati sa-ekor mabok chĕndawan;
Hati hanchor bĕrtambah gondah,
Dalam bĕrahi pada-mu tuan.

Thalasa hari yang kĕdua,
Tĕrbang tiong dua sa-kawan;
Hati hanchor bĕrtambah gondah,
Dalam bĕrahi pada-mu tuan.

Bĕlah buloh sangkaran balam,
Bĕlah di-rumah Tok Pĕnghulu;
Allah bĕlum jadikan alam,
Kita sudah bĕrjanji dahulu.

Bĕlah-bĕlum bunyi malam,
Bunyi di-atas bumbong Pĕnghulu;
Allah bĕlum jadikan alam,
Sahaya sudah bĕrjanji dahulu.

Datok Japar anak Tĕmĕnggong,
Lari masok di-hujong lorong;
Kalau lapar makankan jagong,
Jagong jangan katakan rĕbong.

Ĕnche' Japar mudek mĕnyabong,
Ayam kĕlabu di-sangka tĕdong;
Kalau lapar makankan jagong,
Bambu jangan di-sangka rĕbong.

Sĕrindit di-gonggong lang,
Jatoh ka-longgok Indragiri,
Sudah tĕrsĕlit di-kampong orang,
Baik-baik mĕmbawa diri.

Pisang kĕlat di-gonggong lang,
Jatoh ka-laut Indĕragiri;
Abang tĕrsĕlit di-nĕgĕri orang,
Baik-baik mĕmbawa diri.

Jatoh ka-longgok ka-Indragiri,
Bĕli gula satu tĕmpayan,
Jikalau pandai mĕmbawa diri,
Banyak orang bĕlas kasehan.[1]

Kalau tuan pĕrgi ka-Deli,
Bawa gula satu tĕmpayan;
Kalau pandai mĕmbawa diri,
Di-mana jatoh orang kasehan.

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[1] This and the quatrain just above are out of a series of 5 *pantun berkait-kait.*

Buloh pěrindu di-atas atap,
Hěndak di-buat bambu joran;
Kalau rindu jangan měratap,
Siapa lalu baik di-pěsan.

Sěmbilu di-atas atap,
Jatoh ka-bawah sahaya těkankan;
Kalau rindu jangan měratap,
Lalu orang sahaya pěsankan.

Buloh pěrindu di-atas atap,
Anak itek ampas-ampaskan;
Jikalau rindu jangan měratap,
Siapa lalu tuan pěsankan.

Anjing měnyalak di-těpi kota,
Hěndak di-adang rusa sa-kawan;
Kalau sampai niat-nya kita,
Ku-bayar kaul puasa sa-bulan.

Simpai rotan dari Malaka,
Buat pěmikul rusa běrjalan;
Jikalau sampai niat-nya kita,
Bayar kaul puasa sa-bulan.

Ada suatu kapal Surati,
Mati tukang, mati kělasi;
Kalau ta' dapat bagai di-hati,
Biar-lah bujang sampai ka-mati.

Anak sěpat di-dalam padi,
Anak sěluang mělompat tinggi;
Kalau ta' dapat bagai di-hati,
Biar-lah bujang sampai ka-mati.

Kěnchang-kěnchang angin di-atas,
Hěndak měmutus tali kěchapi;
Jong lilin, layar kěrtas,
Hěndak mělalu lautan api.

Di-těnun kain děngan kěrtas,
Běrmacham-macham warna ragi;
Pěrahu lilin, layar kěrtas,
Běrani ku-langgar lautan api.

Buah běludu buah kěledang,
Běsar greja di-atas bukit;
Lain dahulu, lain sěkarang,
Jauh beda, bukan sědikit.

Ka-hulu měmběli arang,
Greja di-atas bukit;
Lain dahulu, lain sěkarang,
Jauh beda, bukan sedikit.

Lain hulu, lain parang,
Sayang greja di-atas bukit;
Lain dahulu, lain sěkarang,
Jauh beda, bukan sědikit.

Limau manis di-kěbun raja,
Hilang di-bungkus puncha kain;
Mulut manis di-děpan sahaja,
Hati sudah ka-pada lain.

Limau manis chondong ka-paya,
Boleh buat sampaian kain;
Mulut manis ka-pada sahaya,
Hati kaseh pada yang lain.

Rumput manis di-dalam paya,
Padi linat di-atas pěrmatang;
Mulut manis ka-pada sahaya,
Hati-nya bulat ka-bělakang.

Rioh-rĕndah potong kĕrbau,
Kasi makan orang yang ramai;
Orang diam ku-sangka bodoh,
Ombak-nya bĕsar mĕnutup sungai.

Masak nasi, potong kĕrbau,
Hĕndak di-jamu raja Bĕrunai;
Orang diam di-kata bodoh,
Sa-bagai ombak tutup sungai.

Ada gula, ada-nya sĕmut,
Bagai kuching mamah tulang;
Orang kaya apa di-sĕbut?
Kita miskin bĕrbanting tulang.

Jikalau tuan pĕrgi ka-Lukut,
Singgah di-bĕting di-Kuala Kĕlang;
Orang kaya jangan di-ikut
Kita miskin mĕmbanting tulang.

Apa mĕlintang rumah Che' Judi,
Tampak dari pangkalan raja?
Puas sudah mĕngambur budi,
Sahaya miskin, di-buang sahaja.

Dari mana tanam lĕnggundi?
Lĕnggundi tanam di-pintu raja;
Chuma sahaya mĕnabur budi,
Budi di-tabur tĕrbuang sahaja.

Anak balam di-atas panggong,
Kalau tuan ka-Bandar Rĕkan;
Rindu sahaya tidak tĕrtanggong,
Sakalian burong sahaya bĕrpĕsan.

Tĕtak nibong buat panggong,
Hanyut tĕmpurong di-Kuala Rĕkan;
Rindu sahaya tidak tĕrtanggong,
Burong tĕrbang sahaya bĕrpĕsan.

Makan tĕbu di-luar sĕrambi,
Anak tĕkukur atas bumbongan;
Sa-hari bĕrtĕmu, sa-hari mati,
Sa-ribu shukur atas junjongan.

Tanglong tĕrgantong di-Tanjong Jati,
Sayang tĕkukur atas bumbongan;
Sa-hari bĕrtĕmu, sa-hari mati,
Sa-ribu shukur atas junjongan.

" Bismillah " itu mula di-karang,
Pantun anak Jawa Sĕmarang.
Sahaya umpama kain yang jarang,
Jual tidak di-bĕli orang.

Gulama ikan di-karang,
Di-kail oleh anak Sĕmarang;
Sahaya umpama kain yang jarang,
Takut di-jual ta' bĕli orang.

Tanjong Katong ayer-nya biru,
Tĕmpat bĕrlaboh kochi Malaka;
Sĕdang sa-kampong lagi ku-rindu,
Inikan pula jauh di-mata.

Tanjong Katong ayer-nya biru,
Boleh buat chĕrmin mata;
Sĕdang sa-kampong lagi di-rindu,
Ini pula jauh di-mata.

Anak kambing putĕra dĕwi,
Mĕngulam puchok akar bĕludu;
Sireh raja, pinang mĕntĕri,
Yang mana patut di-makan dahulu.

Kambing ini kambing biri-biri,
Hĕndak makan puchok chĕrucholh;
Sireh raja, pinang mĕntĕri,
Yang mana patut makan dahulu.

Kambing sahaya sĕdang lari,
Makan tarok kachang bulu;
Sireh raja, pinang mĕntĕri,
Yang mana sahaya jawat dahulu.

Ayam dĕnak dari Pĕtani,
Di-sĕmbah ka-Dato' Raja Muda;
Sireh di-sĕmat dĕngan nyanyi,
Pinang di-bĕlah dĕngan suara.

Bĕrkokok ayam di-Banting,
Bĕrsahut ayam di-kuala;
Sireh di-tĕbok dĕngan gunting,
Pinang di-bĕlah dĕngan suara.

Burong bĕrtĕriak di-atas kĕramat,
Suara bunyi bĕrdayu-dayu;
Tanda ini dunia kiamat,
Tinggi rumput dari-nya kayu.

Mĕmpĕlam tumboh tĕpi kĕramat,
Di-tanam oleh anak Mĕlayu;
Tanda dunia hĕndak kiamat,
Tinggi rumput dari kayu.

Pinjam kapak pinjam bĕliong,
Hĕndak mĕnĕbang hawar bĕrduri;
Tuan di-atas kĕmunchak payong,
Sahaya di-bawah mĕnjunjong duli.

Ikan mĕnghĕmpas di-atas dayong,
Sisek-nya jatoh ka-atas kĕmudi;
Tuan di-atas kĕmunchak payong,
Sahaya di-bawah mĕnjunjong duli.

Timpa kapak dĕngan bĕliong,
Tĕtak mari pauh bĕrduri;
Tuan di-atas kĕmunchak payong,
Sahaya di-bawah mĕnjunjong duli.

Ada sa-ekor burong puchong,
Leher panjang, kaki-nya kudong;
Tuan sa-umpama kĕmunchak payong,
Sahaya di-bawah tumpang mĕlindong.

Punai jantan tĕrbang sa-kawan,
Sangka tidak kĕmbali lagi;
Tuan sa-umpama kain kapan,
Hanchur tidak bĕrganti lagi.

Tĕrĕngganu bĕrkota papan,
Dudok di-atas tuan putĕri;
Tuan sa-umpama kain kapan,
Hanchur tidak bĕrganti lagi.

Punai jantan tĕrbang sa-kawan,
Ĕntah tidak kĕmbali lagi;
Tuan laksana kain kapan,
Ĕntah tidak bĕrganti lagi.

Babi bĕrmain di-tĕrang bulan,
Singgah bĕrkubang di-rumpun buloh;
Tuan sa-umpama kain kapan,
Hanchur luloh lĕkat di-tuboh.

Sĕmbilan-bĕlas hari rĕjang-nya halipan,
Halipan bĕranak di-dalam padi;
Tuan sa-umpama si-kain kapan,
Burok tidak dapat di-ganti.

Laksamana mudek bĕrgĕndang,
Baju zirah tinggal di-bukit;
Tuan laksana timun dĕndang,
Di-luar merah, di-dalam-nya pahit.

Kalau tuan pĕrgi ka-bĕndang,
Baju merah baharu di-jahit;
Tuan laksana timun dĕndang,
Di-luar merah, di-dalam pahit.

Kalau tuan mĕmbĕli limau,
Mari taroh di-dalam gĕndong;
Tuan mĕmakai kulit harimau,
Bagi tĕrkĕjut kambing di-kampong.

Nangka bulat di-sangka limau,
Sayang sa-biji di-pĕtek kangkong;
Tuan pakai kulit harimau,
Hĕndak gĕrĕtak rusa sa-kampong.

Si-rangkak di-atas bukit,
Patah sompek tulang dada-nya;
Tuan tahu bĕrhati sakit,
Tiba di-orang apa rasa-nya?

Sayang durian di-atas bukit,
Mari di-bĕlah ambil pangsa-nya;
Tuan tahu bĕrhati sakit,
Kata orang apa rasa-nya?

Hiris dahan tĕpi surau,
Tĕmpat sĕmbahyang dato' pĕnghulu;
Tujoh musim timpa kĕmarau,
Baik di-tolong hujan di-hulu.

Sumpit mari si-barau-barau,
Masok di-hutan mudek ka-hulu;
Tujoh musim timpa kĕmarau,
Baik di-tolong hujan di-hulu.

Harimau sa-ekor dari jambatan,
Utusan anak raja Surati;
Tuan di-pandang tidak kĕlihatan,
Gondah gulana di-dalam hati.

Anak harimau dari Bĕntan,
Kĕna panah raja Surati;
Tuan di-pandang tidak kĕlihatan,
Gondah gulana di-dalam hati.

Kain sutĕra bĕrkabong-kabong,
Pakaian anak raja maulana;
Pasang jĕrat di-ujong tanjong,
Mĕngkarong lalu, chichak tĕrkĕna.

Asam kĕlat buah tanjong,
Pĕrahu-pĕrahu anak China;
Pasang jĕrat di-ujong tanjong,
Chichak lalu bĕngkarong kĕna.

Kalau tidak karna kunchi,
Papan pĕti sahaya bĕlahkan;
Kalau tidak karna mati,
Bĕlah dada sahaya tunjokkan.

Anak lang di-kayu jati,
Turun ka-pantai mĕnyambar ikan;
Kalau tidak karna mati,
Di-bĕlah dada sahaya tunjokkan.

Anak bĕrok bĕsar lĕngan,
Masok ka-bĕndang makan padi;
Kalau kaseh alang-alangan,
Biar ta'usah sa-kali-kali.

Chĕndĕrawaseh burong kĕyangan,
Singgah hinggap di-pauh janggi;
Kalau kaseh alang-alangan
Baik ta'usah sa-kali-kali.

Itek bĕlibis di-Lautan China,
Mĕngirai bulu jantan bĕtina;
Chantek mĕjlis bĕrtambah warna,
Sa-bagai jahitan sulaman China.

Apa tĕrlintang laut-nya tĕngah?
Sisek-nya ijau naga bĕtina;
Chantek mĕjlis bĕrtambah warna,
Sa-bagai jahitan sulaman China.

Rumah bĕsar bĕrkisi-kisi,
Bĕlanda mabok dua tiga;
Chakap jangan di-habisi,
Bĕsar rambut di-tinggal juga.

Ada suatu orang Habshi,
Bĕlanda mabok dua sa-rupa;
Chakap jangan tuan habisi,
Sa-hĕlai rambut tinggalkan juga.

Orang bĕrlayar Lautan Ambon,	*Dari Gangsa pĕrgi ka-Kubong,*
Patah tiang patah kĕmudi;	*Singgah ka-Tualang mĕrĕntang tali;*
Putus bĕnang boleh di-sambong,	*Putus bĕnang boleh di-sambong,*
Patah arang sudah sa-kali.	*Patah arang putus sa-kali.*

Pĕrahu lanchang dari Pĕtani,	*Dari sana pĕrgi ka-sini,*
Naik ka-darat bĕli kain;	*Masok ka-dalam turun kain;*
Buah machang sa-rupa kuini,	*Bachang jangan di-sangka kuini,*
Rupa-nya sama, rasa-nya lain.	*Kulit-nya sama, rasa-nya lain.*

It would be interesting to have a Malay poet's view on this point; but something may perhaps be inferred from the discrepancy between the *pantuns* of a Malay Hikayat and those contained in its metrical version, the Shaër. A "Hikayat Chĕndawan Puteh" was published in Singapore in 1328 (1909 A.D.) and a "Shaër Chĕndawan Puteh" in 1331 (1912 A.D.). The date of the latter in the writer's copy is blurred and it may be 1321, but in any case the *Shaër* must be a later production, as many facts and episodes of the Hikayat are missing, and towards the end the poet, apparently weary of his task, is progressing by leaps and bounds, which makes the *Shaër* fairly unintelligible without the knowledge of the *Hikayat*. Many of the *pantun* of the *Hikayat* have been taken over into the *Shaër*, but the poet has altered them according to his taste. A few quatrains will show how he did it.

Hikayat Chĕndawan Puteh.	Shaër Chĕndawan Puteh.
Padi di-sawah pĕtek tangkai-nya,	*Padi di-sawah pĕtek tangkai-nya,*
Orang Fĕringgi jadi kĕlana;	*Orang Fĕringgi mĕlanggar China;*
Tuan di-bawah patek bĕrtanya,	*Tuan di-bawah patek bĕrtanya,*
Sĕkarang pĕrgi akan ka-mana?	*Sĕkarang pĕrgi hĕndak ka-mana?*
Orang Fĕringgi jadi kĕlana,	*Orang Fĕringgi mĕlanggar China,*
Mĕnchari landak sa-kawan lima;	*Bĕrapa banyak mati pĕnglima;*
Sĕkarang pĕrgi akan ka-mana?	*Sĕkarang tuan pĕrgi ka-mana?*
Patek nan hĕndak bĕrtanya nama.	*Kami nan hĕndak bĕrtanya nama.*
Mĕnchari landak ka-kawan lima,	*Bĕrapa banyak mati pĕnglima,*
Di-makan chĕndawan di-pohon uni;	*Di-bantu oleh sĕgala Sĕrani;*
Patek nan hĕndak bĕrtanya nama,	*Kami nan hĕndak bĕrtanya nama,*
Siapa pula tuanku ini?	*Anak siapa tuanku ini?*

Rajawali raja pĕrman,	*Mĕrak mĕngigal di-dalam taman,*
Singgah mĕmanah burong kĕdidi;	*Mati di-patok ular-nya lidi;*
Tinggal-lah balai, tinggal-lah laman,	*Tinggal mahligai kampong halaman,*
Tinggal pĕngkalan tĕmpat ku-mandi.	*Bĕsĕrta kolam, tĕmpat-ku mandi.*

Singgah mĕmanah burong kĕdidi,
Tĕrbang hinggap di-pohon raman;
Tinggal pĕngkalan tĕmpat ku-mandi,
Ĕntah-kan balek akhir-al-zaman.

Mati di-patok ular-nya lidi,
Di-panah oleh Raja Hanuman;
Bĕsĕrta kolam tĕmpat ku-mandi,
Ĕntah-kan balek akhir-al-zaman.

Tĕrbang hinggap di-pohon raman,
Di-sambar paksi burong dewata;
Ĕntah-kan balek akhir-al-zaman,
Sudah-lah nasib pĕrtĕmuan kita.

Di-panah oleh Raja Hanuman,
Di-sambar paksi burong dewata;
Ĕntah-kan balek akhir-al-zaman.
Sudah nasib pĕrtĕmuan kita.

Orang Daik bĕrmain judi,
Awan di-mega jadi tudong-nya;
Memang ta' baik orang pĕndĕngki,
Akhir sĕndiri juga mĕnanggong-nya.

Siamang ku-sangka Zanggi,
Mati di-bunoh hulubalang tua;
Memang ta' baik orang pĕndĕngki,
Badan sĕndiri ia kĕchewa.

Awan di-mega jadi tudong-nya,
Sarang pipit di-dalam nĕgĕri;
Sĕndiri juga yang mĕnanggong-nya,
Hĕndak-lah ingat kĕmudian hari.

Mati di-bunoh hulubalang tua,
Jatoh di-sisi pada pĕngkalan;
Akhir sĕndiri jua kĕchewa,
Maksud ta' sampai jadi kĕmbalan.

Hĕndak makan tidak bĕrikan,
Hĕlang bĕrsarang di-pohon uni;
Sanak bukan, saudara bukan,
Mĕngapa gĕrangan datang ka-sini?

Pĕrgi ka-pantai mĕnjala ikan,
Di-tebar dapat alu-alu;
Sanak bukan, saudara bukan,
Hampir ka-mari tidak-kah malu?

Kayu udek dĕkat desa,
Di-hinggapi oleh si-burong lang;
Orang arif lagi bĕrbangsa,
Baik-lah sĕgĕra kĕmbali pulang.

Di-tebar dapat alu-alu;
Di-sambar unggas si-raja hĕlang.
Hampir ka-mari tidak-kah malu?
Baik-lah sĕgĕra kĕmbali pulang.

Whilst in the usual *pantun* the second couplet is the essential part, and the first lines may differ occasionally without much affecting the total meaning, there is another class of *pantuns* wherein much more stress is laid upon the first couplet, and the second seems to be more loosely attached. There are *pantuns* belonging to certain series of quatrains strung together by a connection between the different first couplets, other than "*pantun berkait.*" Such series for example are those which in the first couplets narrate a legend like that of *Panji Sĕmerang* or *Sĕri Rama,* or series of mnemonic verses such as the *Rĕjang Sombang, Rĕjang Siak* and *Rĕjang Sindiran,* and the *Alif-Ba-Ta* series. In those quatrains which are mostly inferior in quality as compared with the usual *pantun,* the first couplet is apparently the most important, and the second often differs in different versions, whilst the first couplets are identical. The second couplets often seem to be taken from a general stock of *puji-pujian, kĕnang-kĕnangan* or *mĕrĕndahkan diri* verses, and show no individuality. In a contest of singers they may be used to show the wit of the rivals, or during a long trip on a river a lover may drone them to his sweetheart.[1] Most of these series are too long to be given here, but two variant versions of the " Storm in a tea-cup " will illustrate the point.

" Pantun Mĕlayu."	The writer's collection.
Anak ayam turun sa-bĕlas	
Mati sa-ekur tinggal sa-puloh.	Missing.
Mata siapa tidakkan bĕlas	
Mĕlihat kapal bĕraleh laboh.	
Anak ayam turun sa-puloh	*Anak ayam turun sa-puloh*
Mati sa-ekur tinggal sĕmbilan.	*Mati sa-ekur tinggal sĕmbilan.*
Mĕlihat kapal bĕraleh laboh	*Angkat tangan jari sa-puloh*
Di-laut Pulau Sĕmbilan.	*Hĕndak bĕrmohon kapada-mu tuan.*
Anak ayam turun sĕmbilan	*Anak ayam turun sĕmbilan*
Mati sa-ekur tinggal lapan.	*Mati sa-ekur tinggal dĕlapan.*
Di-laut Pulau Sĕmbilan	*Hĕndak bĕrmohon ka-pada tuan*
Di-situ-lah banyak kapal bĕragan.	*Niat di-hati mĕnjadi kapitan.*
Anak ayam turun dĕlapan	*Anak ayam turun dĕlapan*
Mati sa-ekur tinggal tujoh.	*Mati sa-ekur tinggal tujoh.*
Di-situ-lah banyak kapal bĕragan	*Niat di-hati mĕnjadi kapitan*
Anak kĕlasi habis gadoh.	*Kapal bĕrlayar sudah bĕrlaboh.*
Anak ayam turun tujoh	*Anak ayam turun tujoh*
Mati sa-ekur tinggal ĕnam.	*Mati sa-ekur tinggal ĕnam.*
Anak kĕlasi habis gadoh	*Kapal bĕrlayar sudah bĕrlaboh*
Kapal di-laut habis jĕhanam.	*Di-pukul ombak sudah jambatan.*
Anak ayam turun ĕnam	*Anak ayam turun ĕnam*
Mati sa-ekur tinggal lima.	*Mati sa-ekur tinggal lima.*
Kapal di-laut habis jĕhanam	*Di-pukul ombak sudah jambatan*
Panggilkan-nya tukang China.	*Kasi baik tukang China.*
Anak ayam turun lima,	*Anak ayam turun lima,*
Mati sa-ekur tinggal ĕmpat.	*Mati sa-ekur tinggal ĕmpat.*
Panggilkan-nya tukang China	*Sudah baik tukang China*
Mana yang rĕnggang habis rapat.	*Mana yang rĕnggang kasi rapat.*
Anak ayam turun ĕmpat	*Anak ayam turun ĕmpat*
Mati sa-ekur tinggal tiga.	*Mati sa-ekur tinggal tiga.*
Mana yang rĕnggang habis rapat	*Mana yang rĕnggang kasi rapat*
Che' kĕlasi baharu-lah suka.	*Kapal baik di-layar juga.*

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[1] Compare the pantuns in "Anggun che Tunggal."

Anak ayam turun tiga
Mati sa-ekur tinggal dua.
Che' kĕlasi baharu-lah suka
Bongkar sauh bĕrlayar sa-mula.

Anak ayam turun dua
Mati sa-ekur tinggal satu.
Bongkar sauh bĕrlayar sa-mula
Hĕndak mĕnuju gĕdong batu.

Anak ayam turun satu
Mati sa-ekur habis sudah.
Hĕndak mĕnuju gĕdong batu
Jual barang harga yang murah.

Anak ayam turun tiga
Mati sa-ekur tinggal dua.
Kapal baik bĕrlayar juga
Haluan mĕnuju tanah Jawa.

Anak ayam turun dua
Mati sa-ekur tinggal satu.
Baluan mĕnuju tanah Jawa
Sudah naik di-atas batu.

Anak ayam turun satu
Mati sa-ekur habis lalu.
Sudah naik di-atas batu
Di-pukul ombak bĕrtalu-talu.

Anak ayam habis lalu
Tali rotan ambil di-chabut.
Di-pukul ombak bĕrtalu-talu
Sĕgala kapitan kĕlam kabut.

The examples given above of *pantuns* with different first and identical second couplets, and on the other hand of quatrains with identical first and different second couplets may tend to show that the connection between the first and the second pair of lines is not very strong, and that often the picture contained in the first couplets is not conditional or depending on the thought expressed in the second lines. Such pantuns therefore seem to follow rather the "clever arabesque" of some Chinese poetry than the way of the picture strictly illustrating the thought of the Indian sloka.[1]

It would be interesting to know if other peoples besides the Malays and Sundanese have verses similar in structure and use to the *pantun*. Dr. Winstedt in his preface to "Pantun Mĕlayu" speaks of the *pantun* as the love-verse and lampoon of Indonesian peoples, and a comparison with songs from the Philippines, Fiji, New-Zealand should give interesting results. Perhaps the learned societies there could furnish the necessary material.

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[1] The writer has since found in Menangkabau tales six-lined pantuns, of which the 1st and 4th, the 2nd 5th and 3rd and 6th lines rhyme. Particulars will be given in another paper.

A Tamil Malay Manuscript.

BY DR. PH. S. VAN RONKEL.

Professor of Malay at Leiden University.

It is well known that Islam and the greater part of Moslem mysticism found its way to the Indonesian Archipelago not from Arabia, but from Southern India. It is, indeed, a truth so well proved, that it seems superfluous to lay stress on it, or to deal with it in detail. It may suffice to remind the reader of the undeniable fact that the very form of popular Islam, the character of its mysticism, the whole Islamic edifying and romantic literature, the form of many Arabic loanwords, the style of Muhammedan tombs and so on point to Southern India as the land of their origin.

The Tamil words which were introduced by the Dravidian Moslem merchants, who converted the partly animistic partly Hinduïstic population of Sumatra and Java, are still in use. Many a Dekhan saint or divine is venerated in these islands to the present day; in short, the Muhammedanism of the Dekhan still flourishes in the Indonesian world, in spite of later orthodox influences from Mecca and Hadramaut.

The substratum of animistic ideas is always visible through the Islamic tenets in their popular form while the Hindu nomenclature of some Moslem ideas indicates the intermediate layer that preceded the Islamic period. Let us only call to mind that to designate the Moslem teacher, the Islamic fast and the Muhammedan religion old Sanskrit words (*guru*, *puwasa* and *agama*) have survived in many Indonesian languages.

All such historical evidence as is now available regarding the introduction of Islam into the Archipelago has been elucidated by various scholars in the course of their investigations. The people themselves are not aware of the link which exists between their creed and the distant Mohammedan provinces of Southern India. At best, a few Indian immigrants may have a dim consciousness of the existence of that historical connection. Thus, some thirty years ago, a member of the Indian merchant family Akuan at Samarang showed a trilingual Muhammedan manuscript to Dr. Snouck Hurgronje. "This document," the owner explained, "shows the way by which the penetration of Islam has taken place; the Persian part representing the original literary language of Islamic culture in India; the portion in a modern Indian idiom, not understood by us, being representative of the interjacent country between Hindustan and these islands, and the third portion, the wholly intelligible Malay part, the speech of Islam as it is now in this country." But that intelligent merchant certainly is an exception. In order to follow the current of Islamic civilisation we have to examine historical facts and linguistic and religious evidence. In certain cases we have to rely on a single book, tale or manuscript.

Jour. Straits Branch R. A. Soc., No. 85, 1922.

So with the subject of the present paper, a manuscript which clearly shows that the Islam of Indonesia is South Indian in its origin, and was introduced by Indian Moslems, who came from the Dekhan, especially from the Tamil country. The MS. I review, is an ancient looking folio, described in my recently published supplementary catalogue of the Malay manuscripts in the Leyden University Library sub No. 754.[1] It mentions neither the place where it was written nor the name of its original owner. Yet it speaks an eloquent language, as it is composed in two idioms, Tamil and Malay, and contains moreover passages in Persian. So here we find the three Islamic languages in question employed in one book.

This manuscript, moreover, presents an example of Tamil written in Arabic characters and used for the rendering of an Arabic text. Tamil books, it is true, printed in Arabic characters are by no means unknown—(I was shown some specimens in the library of the India Office at London in 1907), but such manuscripts so far as I know, are very rare, and this one at least is unique both in Holland and Dutch India.

I will not tax the reader's patience by an exposition of the system followed in rendering Tamil sounds by Arabic characters; it will suffice to state that a copious use has been made of the so-called emphatic letters and dental letters with dots beneath them. Moreover the transliteration does not seem to be quite consistent. The very first page is typical of the nature of the whole book, Malay being mixed with Tamil without any apparent transition. This page is taken up by a *niyyah*-formula in Malay (the formulary for the inward intention to perform the ritual prostrations, *sembahyang*), ending in an Arabic prayer, which in its turn is followed by an explanation in Tamil, all by one and the same hand, and in one continuous handwriting. So, after an Arabic prayer, at once the text continues with an explanation in Tamil,[2] and so on. Evidently the author or scribe wrote the three languages with equal ease and understanding.

After some introductory matter a regular text begins, *viz.* an Arabic treatise styled: *Izām al-fawā'id fī nizām al-'akā'id,* on the tenets of the creed, accompanied by a Tamil version with fully vocalised Arabic transcription, many diacritical signs but not a single Tamil letter; so it is all in queer-looking Arabic writing. The Arabic dogmatical treatise, by Mahmūd Ibn Muhammad Labai Kumāran begins, after the usual eulogy in honour of Allah and the Prophet, as follows: "The poor slave, who needs the intervention of the Prophet, says: this is a short treatise which deals with what adults should know about the right creed and pious works, and which I have compiled from books of great, renowned *imām's*, as Al-Ghazālī, Al-Nawāwī, Muhammad Ibn 'Arabı, 'Abdulkarīm Al-Jablī, Muhammad Ibn Fadlallāh, Ahmad Al-Kushāshī and others, together with a translation into the Ariwī-language for the use of whosoever does not fairly understand Arabic. I have named it: the great guides in the arranging of tenets, and divided it into an introduction, four paragraphs and a conclusion."

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[1] A MS. in folio 90 folios (180 pp.) written on European paper in a bold and clear handwriting, dated 5 Sha'ban, 1192; worm-eaten.

[2] انت كلماوى چنا ناكل id est *inda kalimawai connanagil* = if one has recited his prayer. The original has diacritical marks.

Now, every sentence of this dogmatical treatise is followed by its rendering into Tamil. The translation therefore is not an interlinear one presenting the equivalents of each separate word and every suffix as is often the case in Malaised and Javanised Arabic texts, but a connected translation of complete periods, in full agreement with the syntax of the idiom used for the translation. But, it is almost superfluous to add, the language used shows an admixture of Arabic words and Persian terms such as is never found in non-Islamic Tamil writings.

The first question which presents itself is: why is the Tamil language indicated by the curious term Ariwī?[1]. Evidently, it represents the Islamic name for the Tamil idiom. At first sight one might be tempted to identify it with Ariwī, the language of Arvi in the Wardha Districts. But according to the Imperial Gazetteer (XXIV, 368):—"about 86 per cent. of the population are Hindus and nearly 4 per cent. Muhammedans. The statistics of language shows that 79 per cent. of the population speak Marāthi; of the remainder 13,642 persons (in 1908) probably all Muhammedans speak Urdu, 25,710 Hindi (principally Brāhmans and Rājputs), 39,385 Gondī and 2,428 Telugu." Arvi moreover does not belong to the Tamil area, and counts too small a proportion of Moslems among its population to give its name to a language used by millions in other parts of India. But, it is known that Aruwā is one of the thirteen countries, in which the inferior type of Tamil is spoken[2] (un pays où l'on parle le bas tamoul), and although the language of this translation is by no means the so-called *kodun* Tamil (the rude, unpolished form), I am unable to propose a more plausible derivation than that from Aruwā with the Arabic ending *ī*. Perhaps a better etymology may be given by some authority in Tamil matters; it may be added that in Hindustani *arwā*, being a Dakhni word, means: "of or belonging to Malabar," which nearly indicates the Tamil-speaking country.

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[1] Arabic بلسان الاروي but in the translation اروفاش *'arabuppacai ariyadawanukku lecyawendi arawippacai kondu oraicceyiyappadi tagawum korwaiceyden idai peruwaitten* etc.

[2] "13 Tamil-nadu (தமிழ்நாடு ௰௩) which belong to the country wherein Tamil is spoken, i.e. the *Cen-tamil-nadu*, where elegant Tamil is spoken and 12 in which the common language is spoken, as *Tenpandi, Kuttam, Aruwa, Cinam, Matadu* etc.

I proceed to quote a few sentences of the beginning of the treatise in Tamil translation: for convenience's sake I abstain from using the elaborate Tamil characters. The Arabic preamble runs:—"Praise to Allah who created the creatures in order to know Him, and ordained them to follow His commands; prayer and greetings be on His apostle Muhammad the Prophet on whom His mercy be bestowed."

The Tamil translation runs thus:

ellā	all
pugalum	praise
pugalciyum	laudation and
Allah Ta'ala	Allah Ta'ala
ukku	to
padaippugalai	creation (acc.)
padaittān	who created
tanai	him
ariya	to know
wēndi	for
tanudaya	his
mārkattūdu	divine way in
nadakkumpadi	to walk like
parīmānān	he ordained
Allah Ta'ala	Allah Ta'ala
udaya	of
salamum	peace and
awanudaya	his
tūdan	messenger
ukku	to
namudaya	our
nabiyār	Prophet
Muhammad	Muhammad
rahmattānawidam....	grace means ....
awargalai	to his
kottiram	tribe
awar	his
tōlanmār	comrades
awarudaya	his
ummatukku....	family to ....
undāwatāgawum	shall become.

Certain portions which were illegible to me (a Tamil Moslem, no doubt, would be able to read them) I have left vacant. In the same manner the translation runs, ever increasing in its interpretation of the Arabic sentences, so that gradually it developes into an ample commentary, fifteen folios, till there comes an abrupt ending. The last page of these fifteen folios is not covered with writing; on the page immediately following a Malay dogmatical tract of six folios begins. Next come some Tamil pages containing different dogmatical and legal items, and some *niyyah*-formulae and wedding-formulae, the Arabic prayers being indicated either by Tamil or by Malay titles, on one page even by a Persian one. So we find here the four great Moslem languages united: the sacred Arabic for the formulae, the old literary Persian, which once was the court language in Northern India, the far spread Malay, which is both the intermediary language of all Indonesian nations of the Moslem creed, and the islamised Tamil, the commercial idiom of the Dekhan.

The text further deals with the common dogmatical and mystical or divinatory subjects, which are usually to be found in so many Indian and Indonesian religious tracts. It would be extremely tiresome to enumerate the contents of this varied manuscript in detail; it may suffice to point out the characteristic parts only. So we pass by in silence the Malay portions on dogmatics and the mystic circles (so-called *dairahs*) and on the different spirits (*rūḥ*) as well as a treatise in catechism form on *islām* and *īmān,* which altogether takes up nearly one-third of the whole book. We will restrict ourselves to a summary.

After a page filled partly with Malay, partly with Tamil and for the third part with Arabic, follows a small treatise in Arabic, concerning the Prophet Muhammad; each Arabic sentence being followed by its Tamil translation and commentary. Subsequently—we omit prayers, some of them with a Tamil introduction—a Tamil enumeration of the Muhammedan months and the luck attaching to them is succeeded by prayers and invocations, and this portion in its turn by a short Malay tract of dogmatical tendency. This joins on to an enumeration, in Tamil again, of the ancient prophets and of Muhammad's wives, which is concluded by a great magical quadrat, fully and completely elucidated by means of Tamil comments, *i.e.* an elaborate and crudely worded exhortation regarding sexual matters. It is very remarkable to find a page containing a Persian portion and a Tamil one, the former being preceded by a couple of lines in Arabic characters in a language which is neither Tamil nor Persian nor Hindustani, but presumably some other Indian idiom.

Next there follows a Malay treatise dealing with nearly the same subject, viz. exceedingly intimate and confidential hints about coïtus and allied items, and this treatise is succeeded by a Tamil portion of a divinatory kind, with a complete calendar. In order to give an idea of the transcription of Tamil in Arabic characters I mention now the numerals in both scripts. In the original diacritica marks are used Arabic characters.

1	وند	*ondru*	ஒன்று
2	ارند	*irandu*	இரண்டு
3	موند	*mundru*	மூன்று
4	نال	*nalu*	நாலு
5	اڽج	*anju*	அஞ்சு
6	ار	*aru*	ஆறு
7	يض	*elu*	ஏழு
8	يد	*eddu*	எட்டு
9	انضث	*onpadu*	ஒன்பது

Finally the last folio, which is detached, but evidently belongs to the book, concludes with a Malay verse of the ordinary kind, on a lady and her birds, with some Javanese words, by a certain

Tambi Mirah, who styles his poem Sha'ir Indra Dibawan, a name of no importance. The author pretends that the book was in the possession of an inhabitant of Batavia, but this assertion proves nothing regarding its real origin. Over the poem there is written a date, viz. A.H. 1192, 4 Sha'bān (1191 *warusham Sha'bān māsam 4 tiram*) *i.e.* 29 August, 1767, and its owner's name a certain Kumāran with an illegibly written name of a town ending in *puram,* certainly not Singapura. This name, if it be one, is divided into three unvocalised words, viz. تل يلبشنو فرم

Having completed my summary of the manuscript I wish to offer a few remarks on the question of its origin. The former proprietor, Professor Snouck Hurgronje, purchased it in Java. But, evidently, it was previously the property of a Moslem, to whom Malay was as familiar as Tamil, and to whom Persian was not an unknown language. An individual of this type one may expect to find in Singapore, at Pulau Pinang, in the Federated Malay States, in short, anywhere in British Malaya and islands, but certainly not in the Dutch Indian Archipelago, not even in Acheen. "Habent sua fata libelli," and Malay books too may have their vicissitudes. I saw in Sumatra Malay manuscripts, which had been the property of descendants of the Sepoys, who on the cession of the Western parts of that island to the Dutch government went over from British to Dutch service. These books had been provided with interlinear comments in Javanese and in Arabic characters, so-called *p'egon.* Evidently this commentary was due to some later owner of Javanese blood. Almost any collection of manuscripts in Java comprises some books of remote origin, which one would hardly expect to meet with in this part of the world.

The manuscript which forms the subject of the present note must have been brought to Java by a native of that country. Through the agency of Dr. Snouck Hurgronje, late Adviser to the Netherlands-Indian government and now Professor of Arabic at the Leyden University, it has found its way to the University Library. As regards the original owner, we can only conjecture that he was a Tamil Moslem, who had dwelt long enough in Malaya to know Malay. But we cannot fancy the existence of a Tamil who lives long enough in a Malay country to master the Malay language so that it becomes equally easy for him as his own original idiom. It is obvious therefore that not he but a son of his, born in Malaya from a Malay mother, wrote this book. From his father he got his familiarity with Tamil, from his mother his knowledge of Malay, from both his Islamic creed. Such a man would be a typical representative of the immigrants who introduced Islam into the Archipelago.

These settlers, Dravidians or Guzeratis, married native women in the Peninsula and in the islands, and their sons, so-called *pĕranakan,* were familiar with the languages both of their father and of their mother. The former idiom they gradually forgot so that finally their only language was Malay. Their sons, in their turn, knew neither Tamil nor Persian, but understood and talked nothing but Malay.

This worm-eaten, slovenly written, manuscript, although neither very ancient nor specially important is a curious historical document belonging to the period when Islam was introduced from the *nĕgĕri di-atas angin* (Persia and Hindustan) into the *nĕgĕri di-bawah angin* (Malaya, Sumatra, Java and the islands further on to the East). It is a document bearing evidence of the great movement that swept away Hindu culture in the Indonesian world. It points to the Straits as the link between Southern India and the Archipelago. Consequently it seemed particularly fitting that an account of this manuscript should appear in the Journal of the Straits Branch of the Royal Asiatic Society.

Leiden, March, 1921.

The Tiger-breed families.

BY ZAINUL ABIDIN BIN AHMAD.

Among the peasant population of Jempul, a settlement of Malay villagers along a river of that name in the Kuala Pilah District of negri Sembilan, there is a belief that certain families in the local tribe (*suku*) of *Tiga Batu* have a mysterious connection with tigers. Report has it that this belief is not peculiar to Jempul, but extends over a wide area in the Nine States—Juasseh, Rembau, Tampin, Terachi, Gunong Pasir, Jelebu and Pantai. The writer however has not made a study of the belief in all these places, and this paper deals only with Jempul. For want of a better term I call the families in question "The tiger-breed families."

The belief is that members of the particular families become tigers *after their death;* a man becomes a tiger, and a woman a tigress. Thus, though the belief recalls the were-tiger and were-wolf stories which are widely known and believed in many parts of the world, it is not exactly the same: the one belief supposes the transformation to take place at will during life, and the other that it takes place only after death. In their life-time as human beings members of these families are said to be peculiarly related with certain tigers of the forest, whom they vaguely recognise as incarnations of dead relatives. These tiger "relatives" sometimes come to the compounds of their human kinsmen, protect their cattle from the attack of foreign tigers, their poultry from civet-cats (*musang*) and their paddy-fields or tapioca plantations from the ravages of wild-boars. The visitors are expected especially during the nights of Hari Raya, or when there is grave trouble in the family to which they belong. But it is seldom that many come together. Usually one or two represent the clan. Often a man will warn a friend belonging to one of these families, not to make mischief when he becomes a tiger. "When your turn comes to become a tiger" (*i.e.* when you die) he will say, "I trust you will still remain a friend to me, and not do me or my folk and cattle any harm. Otherwise I will shoot you. If you require food, you are free to hunt your own fellows in the jungle. Why harm our human kind?" Sometimes such words are spoken jestingly, but more often in a tone of deadly earnestness.

All this sounds as absurd as it is interesting. But all the villagers living within circumference of the families tell the same tale. They say that when a member of one of these families is ill, there is always one tiger at least haunting the neighbourhood of the patient's house (as though there had been telepathic communication between the two). He comes closer and closer as night approaches, and at such a time nobody dares to go out of the house unaccompanied. The compound of the Malay villager's house is usually surrounded with scrub and patches of low-lying shrubs: it is in these that the tiger has his hiding place during those anxious moments of the patient's illness. If the illness is serious, or the patient is dying, the tiger will show signs of trouble and uneasiness. He groans, makes piteous noises and restlessly moves from one end of the compound to the other. Occasionally in his seeming anxiety for the patient's condition, he encounters the human visitors who pass with their torches to or from the patient's house. But he is harmless, though the people have their hearts in their mouths. The dying patient in the house seems no longer conscious of his or her identity as a human being. He tosses about, grinds his teeth and looks wild, manifesting a hundred and one of the characteristics of a tiger, trying to force out a tail (*mĕng-hĕjan ekor*) from the coccyx, and often giving unmistakable responses to the signals from his tiger-friend below. Very often more than one tiger will come and make circuits round the house. With the first peep of day the inmates of the jungle betake themselves to the nearest bushes, showing themselves at times, and making their presence felt all through the day. The following night brings them back to their sentinel routine. But they are not to be harmed nor do they do any harm. The patient breathes his last and then all is silent till the burial is over.

In ordinary cases the prospective tiger dies peacefully, and then becomes a tiger. No one has ever cared or dared to go and watch what really happens at the grave during the few nights following the burial. They say that some days after the burial, the white shroud (*kain kapan*) of the buried body is found lying besides the grave, torn and tattered; and a hole of the size of a man's body is found to have been made into the grave, while the footprints of tigers are seen everywhere. From this it is concluded that the tigers must take the corpse and bear it (*usong*) into the forest where the metamorphosis takes place in some inexplicable way. A tiger representing the dead person makes his appearance shortly afterwards. Even if the person dies in another country, he comes home to his native village in the shape of a tiger, and announces his arrival through a dream to the principal member of the family. Soon after the announcement, a new tiger appears in the neighbourhood. There are characteristic marks on the tiger answering to the marks on the person when alive as a man. If the person had a deformed leg, the new tiger also has a deformed leg. If the person was bald-headed, the tiger also is bald-headed. He is also distinguishable as the personification of such and such a member of the family by peculiar gait and bearing or general build which are those of the dead person. These tigers understand and respond when called by their human names. I cannot illustrate this better than by a personal story. One night, many years ago, my grand-mother was troubled by a herd of buffaloes breaking again and again into her poorly-fenced compound where vegetables and young fruit-trees were sprouting. The moon was overcast, and the night was cool and calm. Repeatedly the old lady drove the intruders away, but as repeatedly they returned. It happened that she had an old friend named Faseh who had died about a year before and was believed to have become a tiger. In her impatience, the old lady shouted out: "O Faseh, my friend! If you really have become a tiger, please do me the favour of driving away these nasty buffaloes, and thus save my little garden from being destroyed." A few moments passed. Then all of a sudden, the buffaloes bellowed and rushed out of the compound helter-skelter for their life; while above the confusion rose the terrible roar of an angry tiger. We were panic-striken in the little hovel where we lived, and the old lady felt sorry for having called the tiger. But for the rest of the night and for many nights afterwards the buffaloes never returned.

Another incident of a different nature illustrates the superstition. A Malay woman named Ba'idah, belonging to one of these tiger-breed families, had a dead brother, believed to have turned into a tiger. One night she dreamt that this brother in the shape of a man returned home from a long journey, very badly wounded in his chest by an accidental shot from a spring-gun (*bĕlantek usa*). He came up the verandah (*sĕrambi*) and there lay groaning with agony and saying he was going to die. When she woke up in the morning she told her husband what she had seen in her dream. On opening the door leading from the main room to the verandah they found that all the verandah was besmeared with fresh blood. They suspected this was the blood of the wounded brother who had come home in the woman's dream. It seemed that the tiger had left the house only a short while ago. Calling their neighbours who came with guns and spears, they followed the track of the blood and foot-prints into the forest. They did not go far when they came upon the carcase of a huge tiger. The distinctive marks they found on the carcase assured them that it was indeed the woman's brother. The mortal wound was exactly in the chest, and appeared to have been inflicted the very same night. Many similar incidents are known throughout Jempul. Time and again it is related these family-tigers visit their relatives' houses during the nights of holy festivities, such as Hari Raya. Sometimes they manage to make their way into the kitchen, and feast over some *rĕbus kĕrbau* or *ikan pindang* that may have been left on the hearth. Morning comes to tell the tale from the traces they leave behind and the clean-licked cooking pots and dishes. This would make an interesting counterpart to the well-known nursery tale of Santa Claus who comes on Christmas eve to bring presents for children.

There are many little graveyards throughout Jempul which are credited with having produced tigers out of human corpses. Two of them deserve special mention, and these are *Kubor Nesan* and *Kubor Lĕban,* situated in Kampong Tengah. These two are among many which have become highly revered by the ignorant masses. They pay their vows (*niat*) there, and propitiate the spirit of the place.

They say that all the tigers springing from these graves are saints (*Harimau Kĕramat*) under the more saintly lordship of the great *Dato Paroï* whose abode is Gunong Angsi, as opposed to Gunong Ledang which has its own army of tiger-warriors and settlers. Fancy and superstition have associated endless tales and legends with these two leading personalities—the Dato Paroï and Dato Gunong Ledang. Of them as of a few other tiger-tales I propose to speak in some future article.

Belief in were-tigers whose transformation takes place during life, is general all over the Peninsula. But, as a rule, the power is ascribed to people of the Korinchi tribe from Sumatra. The possession of the power by a person is said to be indicated by the absence of the furrow (*alor*) which ordinary men have on their upper lip immediately below the nose. Tigers of this sort are called *harimau chĕnaku,* or *harimau jadi-jadian.* They change back into man just as the man changes into tiger. Sir Hugh Clifford in his book "The Further Side of Silence" relates a case of a Malay were-tiger.

Two Legends of Malacca

By R. O. Winstedt, D. Litt. (Oxon.)

The "Malay Annals" (Shellabear's romanized *Sějarah Mělayu,* 1909, Vol. I, p. 60) record how Sultan Iskandar was hunting near Bertam River, when a white mouse-deer kicked his hunting dog into the water. He chose this spot where mouse-deer were valiant for his new settlement and named it Mělaka after a tree (*Phyllanthus pectinatus* of the Order *Euphorbiaceae*) against which he was leaning at the time of the incident.

Now there exists a similar Sinhalese legend of the founding of Candy, a hare and a jackal taking the place of mouse-deer and dog and the hare's courage being ascribed to recoil from a rock that intercepted her flight (Parker's "Village Folk-Tales of Ceylon," 1914, No. 76, Vol. II, p. 3).

In the *Hikayat Hang Tuah* it is related how when they came to Malacca the Portuguese bought as much land as an ox-hide would cover and their captain cut it into strips and so got enough land to erect a large godown (J. R. A. S., S. B. 83, p. 122). Benfey has collected many parallels from mediaeval and modern literature and folk-lore; there is the famous tale of the founding of Carthage, the tale of Hengist in Geoffrey of Monmouth, and another in the French romance Melusine; there is the popular etymology of Hyde Park. Popular etymology erroneously finds the same origin for Bhutnair and Calcutta (Todd's "Annals and Antiquities of Rajasthan," II, 235; 1852). "Thare-kettaya near the modern city of Prome was built 443 B.C. Its name has to do with a very ancient artifice. 'Facti de nomine byrsam taurino quantum possent circumdare tergo.'" (Scott O' Connor's "Mandalay," p. 301; London, 1907). American Indian attributed the trick to Europeans who bought land from them. In Sanskrit *gotsharman* (lit. cowhide) = "a land measure, one hundred feet long and ten broad."

Hikayat Si-Miskin or Marakarma.

By R. O. Winstedt, D. Litt. (Oxon.)

There are 5 MSS. of this tale at Batavia (van Ronkel's Catalogus," CXL-CXLIV): two at Leiden (Juynboll's "Catalogus," CXII and van Ronkel's Supplement-Catalogus (1921) 13); one in the possession of the Royal Asiatic Society, London ("Essays on Indo-China," Second series, vol. II, p. 35). It has been twice (1857 and 1894) lithographed and once (1915) printed in Malay characters at Singapore. It is the printed version I have used for this paper. Newbold mentions the romance and gives a brief synopsis—"British Settlements in the Straits of Malacca," vol. II, pp.328-330 (1839).

Many writers have quoted Professor Snouck Hurgronje's dictum on the home of most Malay romances being "that part of South India which is also the source whence are derived the popular mysticism and the popular religious legends of the Muslim peoples of the East Indian Archipelago" ("The Achehnese," vol. II, p. 122). At the same time few English scholars have adopted his method of analyzing and giving an outline of a tale, so that it may be accessible to students of comparative folk-lore most of whom are ignorant of Malay. Outlines in English are especially likely to be of value, because so many European and Oriental experts in the folklore of British India will have little acquaintance with Dutch; and it is those experts particularly who should be in a position to identify the sources of Malay borrowings.

I give first an outline of the romance of Marakarma, to use its more apposite title, and I add comparative notes.

In Anta Bĕranta, a land ruled by Maharaja Indra Dewa, lived a poor vagabond couple, Si-Miskin and his wife, erstwhile rajas from the heaven of Indra but exiled by the curse of Betara Indra. They were driven away with sticks and stones from palace and cottage and market-place, so that to allay their hunger they fed on plant-shoots and picked bundles of rice (*kĕtupat*) and sugar-sticks from dust-heaps on the highway. When Si-Miskin's wife had gone three months with child, she longed for a manggo (*ĕmpĕlam*) from the royal orchard, and the Maharaja granted her husband's supplication for the fruit. Three months later she longed for a jack-fruit and again the ruler was gracious. She bore a son and named him Marakarma, because he was born in poverty. Digging a site for a hut her husband found a jar (*tajok*) full of gold. He went to the town and ordered shoes, a staff, clothes, horse and trappings, creese, sword and shield (*otar-otar*). Then after bathing he prayed to the *dewa* that a town might be raised up in the forest. His prayer was heard. He ruled over this town, Puspa Sari, with the title Maharaja Indra Angkasa, and his consort was styled Ratna Dewi. She bore a daughter Nila Kesoma. The merchants from Anta Beranta brought fans, water-kettles, shoes, shields, creeses, spears, saddles and umbrellas. Incited by the jealous ruler of Anta Beranta lying astrologers tell Maharaja Indra Angkasa that his two children will work his ruin. They are driven into exile, with no possessions save a ring, a magic stone (*gĕmala*) and seven bundles of rice, the parting gifts of their heart-broken mother.

After the departure of the two children, Puspa Sari is consumed by fire and its ruler with his consort left poor and homeless again in the forest.

In his exile Marakarma learns magic (*kĕsaktian*) from genies, botas, raksasas, dragons and snakes. The children come to a revolving hill where dewas play, and they sit down under a *waringin* tree. The boy catches a bird for his little sister. She wants it roasted. Her brother hearing the crowing of cocks goes in search of a house where he can get fire. The householder mistaking him for a thief, beats the young prince and throws him bound into the sea.

Now the land to which the two children had come was Pelinggam Chahaya. Its ruler Raja Puspa Indra and his queen مندروتن had a son, Mengindra Sari, who refused to wed. Hunting, Mengindra Sari finds Nila Kesoma under the *waringin* tree, weeping and holding a wild bird in her hand. His parents adopt her and call her Princess Unfolding Palm-blossom (*Mayang Mĕngurai*). Finally she marries Mengindra Sari. There is a dramatic passage describing how in his wooing the infatuated prince teases his young mistress over permission to enter his garden.

One day the young princess laments the loss of her brother Marakarma. In vain they search for him. Cast into the sea he had been borne by the tide to the shore of a land where a Raksasa and his wife lived in a house of hair and bones and *batu hidup*. This Raksasa had carried off Chahaya Khirani, daughter of Maharaja Malai (مالي) Kisna, and was keeping her till she should grow big enough to eat. Three months at a time the demon travelled in search of food; three months at a time he abode in his hut. During his absence Chahaya Khirani finds Marakarma on the shore, and revives him. He woos her and promises to slay her demon captor. They bandy love verses (*pantun*). When the demon returns, Marakarma hides under his mistress' bed. The demon declares he can smell man but the captive princess denies it. The Raksasa lights a fire as big as a burning town, pours rice on to a mat 300 feet wide, and eats it along with spiders, centipedes, lizards, rats, flies and mosquitoes which overcome by the steam drop into the rice. He drinks a well of water, hiccups like thunder, picks from his teeth with a log chunks of food so big that they kill cat, goose or fowl by their impact. Then he sings so that the beasts in the forest flee. He asks his captive if her liver is big enough for him to eat. Instructed beforehand by her lover, she declares it will never grow big enough unless he gives her the livers of 100 animals to eat. The demon bids her kill the lice in his hair. With pincers and hammer she kills centipedes and scorpions which the demon has mistaken for lice; and eating fried beans and maize she pretends the noise she makes is the cracking of the eggs of the lice. The Raksasa and his wife go to get the livers of 100 animals but all have fled far from his singing. Marakarma digs a pit near the demon's hut, and sets it with caltrops. He piles up rubbish and lights an *ijok* fuse which will take three days to burn. He and his bride escape with the demon's property in a passing ship. Three days later the Raksasa seeing flames rushes home, falls into the pit and is killed.

Lustful for his wife and riches, the captain of the ship pushes Marakarma into the sea. A shark, asked by Marakarma to put him out of his misery, does obeisance and carries the prince in his belly in the wake of the ship till it reaches Pelinggam Chahaya. The shark sprawls on the beach by the jetty of the Fairy God-mother (*Ninek Kĕbayan*). An eagle instructs the old lady to put rice-grass (*daun padi*) on the shark's belly, whereupon Marakarma steps out. Ninek Kebayan tells him of the country, its ruler and the royal family. Marakarma guesses that Princess Unfolding Palm-Blossom must be his sister. He arranges cut flowers in posies. Ninek Kebayan sells one to Marakarma's wife on the ship, containing the hero's ring and a letter graved on flower-petals, bidding her go to the palace and tell Princess Unfolding Palm-Blossom of their straits. (The first posy she sold, Ninek Kebayan pretended was arranged by herself. Chahaya Khirani wants to be taught the art. To keep the old lady in countenance Marakarma sends a green fly with her on her next visit which buzzes over the bunch and settles wherever flowers should be stuck!)

Chahaya Khirani is invited to the palace, shows her husband's ring and tells of his plight. The king summons all people to a farewell feast to the wicked ship's captain. Miraculously provided with a steed a prince's attire and 40 followers, by means of a magic stone (*gĕmala*) given him by a *bota,* Marakarma goes to the feast. The householder who first cast him into the sea and the ship's captain are both executed (*salangkan*).

Transported to Puspa Sari by the help of a magic stone, the hero finds his father's kingdom desolate forest. He meets his mother gathering firewood and stays with his parents in their forest hut. He reveals himself and prays that Puspa Sari be restored. His prayer is heard. He returns to Pelinggam Chahaya and fetches his sister and her husband and his own wife. Ninek Kebayan is twitted with her inability to walk and advised to get a young husband to carry her. The royal party set out for Puspa Sari in glass sedans (*mongkor kacha*) and on horseback and are met on the plain Tinjau-maya (تنجوماي). Maharaja Indra Dewa fearful lest the importance of Puspa Sari eclipse that of Anta Beranta attacks Marakarma. Marakarma invokes the aid of seven genies, whom in his early exile he had met at lake Indra Semandra,—Raja Mengindra Dewa, Dekar Agas Pri, Raja Kisna Indra Dewa, Raja Mengerna Lela, Raja Chindra Lela and his wife's brother Raja Bujangga Indra. A great battle ensues. Raja Gerdan Shah slays Raja Berma Gangga. Raja Rum Shah is captured and put to scorch in the sun, whereupon firing an arrow that brings rain and mist Raja Shah Pri releases him and ties Raja Bahrum Dewa in his place. The hero causes a town with fort and palace to arise by virtue of a magic stone given to him by Maharaja Dewa Angkasa on the revolving mountain. He encounters his jealous rival, the ruler of Anta Beranta. Each shoots arrows, that turn to fire and to rain that dout the fire, to dragons and to countless demons that devour the dragons. "Thunder rumbled and crackled faintly in the distance; a rainbow stretched across the heavens; stormy sunset clouds arose everywhere; rain drizzled; scale-like clouds were in the sky; the rain-bow was hardly visible; a breeze blew softly; the sunlight was yellow, and lightning now and again streaked the sky; black clouds gathered: portents all of a great prince's death." Maharaja Indra Dewa, ruler of Anta Beranta, fell slain, charging the victor with his last breath to have mercy on his daughter, Nila Chahaya. His wife and daughter and their women hurry on to the field. The wife stabs herself on her husband's body. Nila Chahaya is married to Raja Bujangga Indra and the young couple rule Anta Beranta. "Where are we going now?" asks Ninek Kebayan. "To marry you to a vizier," laughs her mistress. "Well," croaks the old dame, "I did dream last night I was bitten by a snake."

Raja Bujangga Indra takes his sister and Marakarma and a royal party to visit his father, Maharaja Malai Kisna, in the land Merchu Indra. The Maharaja takes his daughter and son-in-law seven times round the country on a seventeen-tiered throne (*pancha-pĕrsada*). Marakarma becomes Sultan of Merchu Indra.

Mengindra Sari becomes ruler of Pelinggam Chahaya.

The episode of lying astrologers is paralleled in the *Hikayat Jaya Langkara,* and the folk-tales *Raja Budiman* and *Raja Denan.* The episode of two children exiled, separated under a tree, the girl being found and married by a hunter prince and reluctant to tell of the loss of her brother until after her wedding, is found in a Sinhalese tale (Paker's "Village Folk-Tales of Ceylon," vol. II, No. 155 (a)), though details and conclusion differ. A packet of cooked rice is commonly a parting present to a banished child or prince in Sinhalese tales (*ib.* I, No. 7; II, 146 (a)). The incident of a prince *incognito* marrying a girl and taking her on a ship, being thrown overboard but rescued, and coming to a land where he is recognized and honoured, is found in numerous Indian tales (Steel and Temple's "Wide-Awake Stories," p. 138; F. A. Steel's "Tales of the Punjab," p. 129; Swynnerton's "Indian Nights' Entertainment," p. 276; Knowles "Folk-Tales of Kashmir," p. 167) which all commence with the banishment of two princes owing to a step-mother's cruelty. In a Sinhalese tale with a similar beginning (Parker *op. cit.* I, No. 7) it is a dried fish he had restored to the water which rescues the prince and put him on a sand-bank near to a "flower-mother's" house; the flower-mother discovers that the fellow who threw the prince overboard is about to marry the princess; the prince interrupts the wedding; his oppressor is quartered and the prince becomes a king. It is pretty clear that this Indian tale with its many variants is connected with the more elaborate composite Malay romance.

The comic interludes, in which Ninek Kebayan "the flower-mother" is twitted, remind one of a passage in *Raja Donan* (J. R. A. S., S. B. XVIII, p. 242) and of the passage in the *Hikayat Maharaja Bikrama Sakti* (or *Nakhoda Muda*) where the princess' maids are frightened by the parroquet. The description of the demon *Raksasa* is spirited.

There are a few *pantun* in the romance, but to discuss the occurrence of such verse profitably it is necessary always to collate all available MSS. and determine if copyists have followed one original or preferred to substitute verses they happened to fancy.

In quoting parallels from Sinhalese folk-lore, one must remember "that stories which are current in central India, or the lower part of the Ganges Valley, or even the Panjab, as well as tales of Indian animals such as the lion, may have been brought direct to Ceylon by immigrants from Kalinga or Magadha or Bengal. Apparently it is in this manner that the evident connexion between the tales of Ceylon and Kashmir is to be explained, the stories passing from Magadha or neighbouring districts, to Kashmir on the one side, and from Magadha or Kalinga to Ceylon on the other" (Parker, *op. cit.* vol. I, pp. 38-39).

It will be of interest to students of local folk-lore to learn that according to Perak legend Marakarma, the hero of the romance dealt with in this paper, built a fort of cockle-shells on the plain Anta-Beranta at the mouth of the Bruas River (cf. McNair's "Perak and the Malays," pp. 23-24)! A Chinaman is said to have removed the shells to Penang and burnt them for lime.

Hikayat Indraputra.

By R. O. Winstedt, D. Litt. (Oxon.)

In Journal No. 82 (1920), pp. 145-6, I discussed the date of the Hikayat Indraputra, prefacing my paper with references to the MSS. of that romance. Here I propose to give an outline of the story from the lithographed Singapore edition and to add notes on some of the incidents and sources of the tale.

Indraputra was the son of Bikrama Puspa, ruler of Samantapuri, and his queen Jumjuma Ratna Dewi. Astrologers prophesied luck for him but declared that at the age of seven he would be separated from his parents and undergo many adventures; they advised that he should not play with animals. One day two craftsmen made the king fishes that swam and a golden peacock. The peacock flew off with Indraputra and set him under a pomegranate tree in the garden of Ninek Kebayan. When the old lady went to sell flowers in the palace, she took Indraputra, pretending he was her grandson. He was brought up by her and a childless vizier. The ruler of that country, Shahsian, speared a deer while hunting and noting how a fawn ran to tend its wounded dam thought of his own childlessness and ordered his viziers on pain of death to discover a means of getting him a child within 40 days. Indraputra volunteered to get from Berma Sakti a cure for the king's childlessness. He sets out. All the beasts of the forest bow to him and beg for help against their persecutor, a Raksasa, who dwells on Mt. Indra Gilan.

He comes to this bone-strewn mountain, whereupon a human skull warns him not to ascend and tells how the demon in the form of an old man had cut him down. The demon meets Indraputra in the shape of an old woman and offers him a sword: he cleaves the demon in two. The demon changes into a young woman: the hero resists her blandishments. The demon changes into a corpse beside a hill he creates. Indraputra ascends and enters a cave full of riches. He reaches the top of the mountain and descends on the opposite side into an orchard. He comes to a plain (*Padang Lela Sri*) beside Mt. Teraji (ترعاجي) where Muslim Genies feed, water and exercise their horses, and practise warriors' games, under Prince Nabat Rum Shah (نبات رمشا) son of Dzahir Johan Shah (طاهير جوهن شاه). Infidel genies under Tamar Jalas (تمر جالس) the son of Tamar Boga (تمر بوڬ) trespass there. The two troops fight. Indraputra helps the Muslim Genies and slays Tamar Jalas. He is given princess Jajama

(ججما) Ratna Dewi, sister of Nabat Rum Shah, in marriage. Anon he leaves on his quest. He comes to Lake Shamendiran (شمنديرن Samudari *Juynboll*) and sees corpses strewn under a large tree. One of the corpses warns Indraputra that a man-killing Raksasa lives by the lake whose coming troubles the water. Indraputra pretends to sleep and seizes the demon or fairy (*pĕri*) by the hair. The fairy gives him a magic stone (*guliga*) which will raise storms, thunder and lightning; also he tells how once in seven days Princess Gemala Ratna Suri, the betrothed of Raja Dewa Lela Mengerna, bathes in the lake and how atop her bower is a magic stone.

The fairy bids Indraputra steal her jacket while she is bathing and demand the talisman as ransom. The fairy takes Indraputra to his golden bejewelled palace under the lake.

Now Gemala Ratna Suri dreamt she was nipped by a dragon and her talisman stolen. She and seven serving nymphs (*biduanda*) don flying jackets and fly (followed by flying caskets of rice-paste and *langir*) down to the lake, where under a pomegranate tree hides Indraputra, having ascended by virtue of his magic stone from the fairy palace below the lake. The princess and her companions bathe. Indraputra steals their flying jackets and then by virtue of his magic stone descends under the water and nips the princess' toe. She ascends the shore with her attendants. In vain they hunt for their jackets. The princess waits biting her finger under a date tree. Indraputra bandies verses with the nymphs. At last the princess approaches and promises him the magic stone in return for the flying jackets. Seated on one of the flying caskets he follows the princess to get the stone. The girls enter the bower. Indraputra is left outside. He forces the seven gates of the seven fences, guarded by an elephant, a tiger, a lion, a rhinoceros, a dragon, a roc (*Gĕroda*) and Raksasas on horseback—all mechanical terrors with jewelled eyes; their springs cut by the hero, they fall down. He is taken to a pleasaunce full of singing birds and bathes in a fragrant stream, attended by the nymphs. He is put to sleep in the hall called Rangga Puspa Brahi, whose walls are of glass and ceiling adorned with a tree wherein an owl sits.

He marvels at the wonders of Allah. The princess gives him the magic stone that can create a country with viziers and thousands of genies under four captains, Degar 'Alam leader of genies and fairies, Degar Kilat who in an instant can go to a far country or under the sea, Degar Agas who can fetch fire or wind, Degar Sru who can call down mist and lightning. To use the stone the hero must invoke the princess' ancestor, Dewa Lak Pri (لقڤري) who lives in the sea.

Now Raja Dewa Lela Mengerna got a deer while hunting and sent it to his betrothed. The messenger reported that the bower had been forced and there was a youth with the princess. Raja Dewa Lela Mengerna sets out to fight. Indraputra by means of the magic stone calls up rival forces and engages in single combat with the angry prince, calling rain to dout his rival's fire and so on. Nabat Rum Shah comes to his help. Raja Beatadzir (بحتغر) Shah, father of the princess Gemala Suri, hearing she has entertained a mortal, is angered and prepares his armies, but the demon of the lake pacifies him. He settles the strife, and weds his daughter to her betrothed. Indraputra stays with the newly married pair. One day while they are hunting Dewa Lela Mengerna leaves Indraputra for a while and the hero falls asleep under a tree, where Tamar Boga flies off with him to cast him into the sea. Indraputra slays Tamar Boga and falling into a vast plain comes to a stream sweet as honey whose shell-fish (*karang*) accost him by name.

He eats the fish throwing back the shells which become alive again. A white lotus floats up and accosts him. He puts it in his turban, where it turns to rose-water and drips on his body. A red lotus floats up and then a blue; he wears both and they turn to scent. Fish and crabs greet him; he eats them and throws bones and shells into the water where they come to life. Flowers greet him; he plucks them and they turn to posies (*gubah; malai*). He comes to mountains of iron, tin, brass, silver, gold and gems respectively, on all of which birds welcome him. He comes to a mountain of fire and in despair uses his talisman to summon Dewa Lak Pri, whom he asks to take him back to Gemala Ratna Suri. It is a long journey, "seven days' flight for a bird," and if he asks for water he will fall into the lake called Sea of Love (*Bahar u'l-'Ashek*), whose sands are of gold and banks of camphor, and mud of musk, and stones of jewels.

Of course he asks for water and descends at the lake. On its waters are beflagged boats (*pelang, lanchang*) of gold and silver, and royal genies and fairies race them. By the aid of his talisman Indraputra creates a storm and sinks the boats, drowning many of the fairies; then to the amazement of the survivors he stills the storm and restores the boats and the drowned fairies. He comes to another lake Baharu'l-Waji (بحرالواجي) by which is an island Bahrum Dewa.

On that island is a girl chased by two men; she turns herself into a flower and they become pigs and try to eat the flower; she changes into a gem and the men into eagles which strive to seize the gem. A voice calls Indraputra. The gem falls into the lake and becomes a blue lotus; the birds change into dragons. All vanish. Four maids stand by the edge of the lake. They tell Indraputra that the princess was Seganda Chahaya Iram daughter of

Raja Buang Shah, being chased by two suitors (*mambang*) Degar Akas and Ngedan Kilat, both of whom had been encouraged by her father while she was a child. By the advice of astrologers she had been put on the island along with a tablet (*loh lazuardi*): the astrologers had prophesied that a mortal Indraputra would solve the difficulty of the two suitors. Indraputra reads the writing on the tablet. The maids invoke the princess who rises to the surface a lotus and changes into a princess and talks to the hero. The two suitors appear in anger. Indraputra pacifies them and taking the princess to a well bids her look into the glassy surface. Her shadow becomes a princess identical with herself, who is named Seganda Chahaya Bayang-Bayang. The princess takes Indraputra on an elephant into her kingdom and all the people run to see, "some with skirts half adjusted, some with jackets half donned, others with hair untied." The two suitors marry the two princesses.

Indraputra comes to a mountain where is the treasury of Raja Bahrum Tabit (صلينه *v. Ronkel,* طابق *J.*) guarded by a cobra (called ممدود *J. and R.*) which he kills. He enters the forty chambers and is attacked by a horse, a genie Zanggi Gerdan, whom he tames with genies' language. The horse tells him to take a talisman from the head of a glass casket containing a substance (بدي زهر) from the belly of the cobra: that substance will revive the dead.

Now in the land of Zaitun (زيتون) ruled Raja Puspa Pandai, a Muslim genie, who had a son Detar (ديتار) Pandai and a daughter Chendra Lela Nur Lela: his subjects were apes and monkeys, sloths, squirrels and beasts of the forest, who by night became human beings. He puts his daughter in a guarded bower with a myna-bird and a parroquet to amuse her. The birds sought a husband for their mistress and thirty-nine suitors came and heard the fish sing in the pond beside the bower but fell severed from the bridge of swords which led up to it:—the first suitor when sought was reading the romance of "Baginda Shah 'Alam." Now Zanggi Gerdan flew with Indraputra to this bower and the hero entered it safely. He dipped his magic substance in water from a glass bowl (*mundam*) and restored the 39 suitors to life. The princess took him to her parents.

In Zaitun was a great *dewa* king, Raja Gohar (گوهر) Jin, who had a daughter Talela Mandu (Madu *J.*) Ratna he kept in a guarded bower on the plain of 'Aji. To this bower came the golden peacock, which had flown off with Indraputra, and told the princess of his prince's graces. She called a draftsman to draw his likeness. The peacock drew an outline on the draftsman's breast and the man copied it.

After arranging that princess Chendra Lela Nur Lela marry Nabat Rum Shah, Indraputra departs on his steed and waters him at a pool where a *dewa* Malik Zahib waters his goats. Malik Zahib is angry. Indraputra by magic dries up the pool and at Malik Zahib's entreaty refills it with water. Talela Mandu Ratna sees him and sends her maid to ask Malik Zahib who he is. Malik Zahib prevaricates, but when the maid threatens his goat will die if he fail to tell, he reveals the name of his visitor. Her mistress tells her to take the golden peacock and pretend to sell him to Malik Zahib in the presence of the stranger prince. Indraputra recognizes the peacock and asks to meet the princess. Verses are bandied between him and the maid. At night his magic steed takes Indraputra into the princess' bower. Using the talisman given by Gemala Ratna Suri he calls up hosts to fight the guards set round the bower by Gohar Jin. A great battle ensues. Indraputra captures and throws into a trance 40 champions including Raja Ghuran Shah, whose sword is a foot broad. Raja Lela Mengerna, Raja Nabat Rum Shah and all the royal fairies and genies, whom Indraputra had helped on his travels, arrive. Raja Gohar Jin accepts the hero's suit for his daughter's hand. The 40 champions are brought to life by a talisman dipped in oil.

In Samanta Beranta ruled Raja Talela (تليل: تليل J.) Shah, father of princess Sri Bulan, the sought of many suitors. In that land was a lake and by it a cave where dwelt a demon Ghuran Akas (غور كش J.) who roved and slew folk at night. Efforts to slay the demon and to block his cave failed. Astrologers declared he could be killed only by Indraputra. The ruler sent his sons Maharaja Derkas (دركس) and Indra Jilani with a letter inviting Indraputra's aid. Indraputra set out, carrying his bride in a pearl casket, and followed by all the warriors and fairies he had helped. (The passage where Talela Shah asks his son if each passer-by in the procession is not Indraputra reminds of an exactly similar passage in the *Hikayat Pĕlandok Jĕnaka* (Malay Lit. Series 13, 1915, p. 65) where Raja Singa puts the same question to Raja Kra before Raja Mousedeer passes). Indraputra enters the cave of Ghuran Akas, lighting its depths by his talisman and slaying the huge demon. In the cave is a treasure chamber, on whose door is inscribed the name of Raksa Shah, ancestor of Raja Bahrum Tabut. It takes a month to traverse the cave, wherein is found a pleasance, a bower and a sea guarded by Derma Gangga who gives Indraputra a magic arrow. Indraputra marries Princess Sri Bulan. The pair are escorted seven times round the country on a seventeen-tiered platform (*pancha pĕrsada*).

Bahrum Tabut, ruler of دالعرلهولس or الموس hears how Indraputra has slain Ghuran Akas and sends him a challenge. Indraputra by magic twists the head of the messenger, an infidel genie, face behind, and sets out to meet his aggressor. On his magic arrow he shoots to the feet of Bahrum Tabut a tablet (*loh lazuardi*) found in Ghuran Akas' cave predicting death. Terrified Bahrum Shah seeks peace and welcomes Indraputra to his palace.

Indraputra goes to the land of Raja Puspa Pandai and marries Nabat Rum Shah to Princess Chendra Lela Nur Lela.

Raja Dewa Lela Mengerna tells Indraputra that to meet Berma Sakti he must shut his eyes and wish: opening them he will find himself on a plain under a great tree; to sleep under that tree is to invite death from the demon that lives in it; presently a light as of swords will be visible and that light will be Berma Sakti and must be followed. Indraputra observes this advice. The demon of the tree gives him a talisman that will save him from death and enable him to enter rock or timber. The light he follows turns into a pleasance, wherein dwells Berma Sakti surrounded by his pupils (*murid*). At the full moon Berma Sakti takes Indraputra to the lake Bahar-ulka (بحرالقا) and the island Maalim Khirat (معالم خيرة) where a white lotus to cure the childlessness of the ruler of Shahsian is to be found. On the way the pupils of Berma Sakti are scattered by a storm our hero invokes and he arrives before them on his flying horse. At the island he turns into a dragon and frightens them and calls down rain that wets them while he remains dry. Berma Sakti takes him to a pool where floats a white lotus. They all return to Berma Sakti's palace. At night Indraputra calls forth his three wives out of his magic pearl casket. Berma Sakti takes him to the plain Puspa Beranta where a throne mysteriously appears and a sword of its own accord slays the pupils whom Indraputra is ordered to revive with his charm (بدي زهري) The sword then chops them to pieces and Berma Sakti has to use his own magic stone (ثمش قم) to restore them. Berma Sakti tells how the white lotus must be cooked as vegetable; if it fades, there is poison in the pot, for which he gives Indraputra a talisman that will serve as an antidote. He tells Indraputra to close his eyes and wish. So our hero finds himself back in Ninek Kebayan's untended garden. He presents the white lotus to Raja Shahsian. The jealous viziers poison the dish to kill him. He uses his talisman. He becomes court chamberlain. Two maids of the court eat plants that spring from the discarded seeds of the white lotus and become pregnant. The jealous viziers accuse Indraputra of seduction and set him and the girls adrift at sea on a raft. Raja Shahsian's queen bears a daughter, Mengindra Sri Bunga, and thirty-nine princes come to woo her.

Indraputra's raft is broken in a storm; the girls are lost; Indraputra walking below the sea comes to the bower of an old princess, Raja Dewa Al-Kafri (القفري) grandmother of Gemala Ratna Suri, who gives him a cloth Samanta-Puri, (Sutrapuri *Juynboll*) which laid on the body of a sick person will effect a cure. After wandering seven years below the sea our hero returns to the country of Raja Shahsian and finds his daughter sick. The king proclaims he will marry her even to a slave if he can cure her. Indraputra cures her with his cloth. Then the jealous viziers and the 39 suitors urge the king not to fulfil his promise but to take the princess to the island Pelinggam Dewa and give her hand to the suitor who can catch her favourite parrot. Indraputra uses his talisman and calls genies to build a magnificent barge, which the princess chooses before those of other suitors for her voyage. He calls down a storm which troubles the others while his barge sails through calm waters. On the island the parrot is released. The princely suitors climb a tree (*mĕrangsi*) to catch the bird. Indraputra fires a magic arrow that turns into wasps and bees which sting the suitors and makes them tumble to earth. Indraputra goes to the tree and the parrot alights on his hand. They return. The princes are defeated by Indraputra at sword-play. Ten of them waylay and slay him. His three wives issue in male attire from the casket wherein he keeps them and restore him to life by using the بدي ذهري . Indraputra on his magic steed beats the prince on horse-back. Again they kill him and hack him to pieces. His three wives in male attire find the corpse and show it to Raja Shahsian. Later they revive him. He beats the princes at archery, his magic arrow creating a cloud and wind to disperse the cloud, fire and rain to dout the fire, the arrow returning each time to the quiver: by his magic the arrows of the princes cannot be drawn out of the quivers. Raja Shahsian prepares to marry his daughter to Indraputra, who sends for all the friends of his travels. The wicked viziers and the princes remove all weapons secretly by night and prepare to attack Raja Shahsian. Indraputra calls on Dewa al-Kafri and uses (*tambangkan*) his talisman, whereupon is created a country of fairies and spirits armed and mounted on horses and elephants. Also Indraputra's friends arrive in hosts. The wicked viziers and princes determine to flee by sea. Indraputra calls down storms that destroy their ships. Degar Agas from the air tells them who Indraputra really is, and they return and ask his pardon. He marries princess Mengindra Sri Bunga and finally, taking his four wives in the casket worn at his waist, goes down to a ship and sails to his parents at Samantapuri, where amid great rejoicing he is made Sultan.

The *Hikayat Indraputra* bears marks of being a pastiche, containing a number of folk-tales clustered round the person of the hero.

Flying wooden peacocks are common in Indian folk-lore (Parker's "Village Folk-Tales of Ceylon," II, pp. 18-30, III, 88-91; Chavannes' "Cinq Cents Contes et Apologues," II, p. 378).

In one Sinhalese tale (Parker, *op. cit.* III, p. 194) there is a prince who astrologers say will be spirited away to wander, who is therefore carefully guarded, who is given a toy wax horse and flies off on it to the house of a "flower-mother," the Malay Ninek Kebayan:—the beginning of our tale though the rest of the story is quite different. The incident of a prince seeing a fawn run to its wounded dam is found also in the *Hikayat Nakhoda Muda* (J. R. A. S., S. B., 83). The incident of a speaking skull is found in the well-known *Ht. Jumjumah* where a skull addresses Jesus:—the romance was translated in the "Asiatic Journal," 1823. The theft of the flying jackets of a princess and seven attendant nymphs occurs in the *Ht. Malim Deman* (J. R. A. S., S. B., No. 83), and is the plot of a world-wide tale:—Hartland's "Science of Fairy Tales," ch. X; Parker *op. cit.*, II, pp. 344-355. The talisman that can call up cities and people from the inane is common in Eastern folk-lore: Parker *op. cit.* III. p. 130; Natesa Sastri's "Story of Madana Kama Raja," p. 20; "Sagas from the Far East", p. 135. The transformation of a girl into a flower and a gem and of her pursuers into pigs finds parallels in the Hikayat Sri Rama, in "The story of Madana Kama Raja," p. 2, and in Swynnerton's "Indian Nights' Entertainments," p. 216; the transformation of a girl into a lotus in Stokes "Indian Fairy Tales," p. 144. A luminous cobra-stone such as lights the cave for our hero is found in many Indian tales:—Frere's "Old Deccan Days," p. 36; Day's "Folk-Tales of Bengal," p. 18; Jataka tale, No. 543, vol. VI, p. 94. So, too, the magic stone that dries up water (Parker, *op. cit.* II, pp. 14-15) and enables princes to visit palaces under the sea (L. Behari Day's "Folk-Tales of Bengal," p. 17). Of the quest for a flower as medicine I have written already (J. R. A. S., S. B., No. 82, pp. 147-8). "In the *Maha Bharata* and *Ramayana* arrows are sometimes represented as returning to the sender, who in such cases was a being possessing supernatural power."

Hikayat Putra Jaya Pati.

By R. O. Winstedt, D. Litt. (Oxon.)

So far as I have been able to trace, only two MSS. of this tale exist. One is recorded in Van der Tuuk's catalogue of Malay MSS. in the Library of the India Office, London: his account of it runs as follows:—

"No. 98 small 4 vo. *Ht. Indra Jaya Pati.* The hero son of Kalawandu king of a realm in the west called Langkam Jaya is carried off in his seventh year by a spirit in the form of a tiger to a mountain Mahabiru, where the tiger vanishes after handing him over to Narada to learn magic. When Narada turns himself into a giant and a *garuda*, Indra Jaya Pati alone of his pupils faces him. Finally the hero marries princess Chindra Nur Lela and is made heir apparent by his father under the title of Maharaja Bikrama Indra."

The other MS., which I have used for this paper, is in the library of the Committee for Malay Studies, Kuala Lumpur, Federated Malay States. The title reads Putra for Indra. A golden horse takes the place of the tiger. The MS. is written on blue ruled foolscap and the colophon records the copy was finished on Monday the 6th Shawal, 1238 A.H. in the year *alif* by Abdulkadir ibni Hussin Mera, Jawi, of Kedah.

The following is a summary of this second MS.:—

Raja Kalawandu ruler of Langkam Jaya is childless. On the advice of astrologers he lavishes alms on religious mendicants till by their prayers his consort conceives and on Monday the 16th day of Rajab, while thunder rolls and a rainbow is seen and rain falls gentle, bears a son. Astrologers prophesy the child will have magic powers and be a mighty prince but a four-legged creature will soon divorce him from his parents till he reaches the age of thirty when he will return famous with many followers. He is named Putra Jaya Pati, and called Putra Jaya Pati Indra.

One day the king takes his son to a field to watch other children play. He falls asleep on his dais and the little prince runs off to play. A genie disguised as a golden steed, approaches the field; the little prince mounts and is carried off into the forest toward a blue hill (Gunong Mahabiru). There the horse, who is descended from the genie Afrit, vanishes after telling the prince he will join in wars with genies, fairies, demi-gods and demons and should climb the blue hill and study magic arts from Begawan Narada. He sets out and meets ascetics who feed him with bananas, manggoes, jackfruit, mangosteens and so on, and take him to the teacher, who foreknowing his advent sends his pupils to escort the prince.

From Narada the prince learns all the magical arts of war, how to cause rain of fire and stone and weapons to descend. He turns a spike of grass (*lalang*) into a caparisoned steed and mounting practices the arts of war with the other pupils, turning the steed back into grass when night falls. One day Narada transforms himself into a large red-eyed demon. All his pupils flee except Putra Jaya Pati who engages him with arrows which turn into fire, rocks, steel, dragons. The demon turns into a roc (*gĕroda*); the prince into a harpy (*walimana*). At last Narada reveals himself and the fight ceases. One day thinking of his parents, Putra Jaya Pati weeps and asks leave of his teacher to go home. Narada gives him a magic casket out of which can be invoked four warrior genies with armies. He calls forth the four warriors سغك موك سيره Sang Sĕtiara, تراتف سنداوا to swear fealty to the hero. The hero departs, and traverses plain and forest till he reaches Lake Samandara, where fishes greet him. He eats shell-fish and casts the shells into the water whereupon the shell-fish come to life and laugh. He eats pomegranates from a tree hard by and casts the husks into the lake, whereupon at once they break into flower and fruit that ripens. A voice warns him. He looks and sees a skull. The skull says it was once a man, Bujang Juara, the servant of the hero's sire, who was killed by a demon as he slept under a tree at that spot. The hero pretends to sleep and worsting the demon takes his sword. He comes to a plain with a bright light in the centre and asks an old man Malik Indra whom he meets, what it is. It is the bower of Princess Chindra Nur Lela, sister of Indra Samandara Lela, and daughter of Raja Gangga Wijaya. The princess is betrothed to a mighty fairy prince, Raja Indra Warna. against her own and her parents' will. Malik Indra, guardian of the princess' garden, invites the hero to his house and takes him to bathe where the princess bathes. He spies on the princess through the wall as she comes to the garden. The princess sends a maid to invite the wife of Malik Indra to accompany her to the garden called Kesoma Angsoka. The maid faints at the sight of the hero's beauty. Another maid fetches the old lady who tells who her adopted son really is. The princess falls in love with her description. The old lady goes home. The princess sends her maid Dang Sangkurana (دغسڠكوران) to beg her to detain her adopted son, and invite him to be a spectator of games on the morrow so that she may get a glimpse of him. The hero tells the old lady that if the princess is anxious for a love affair he must see her that night and bids her take a message to the princess:—

Basahan sambil bĕrdiri,
Kain pualam di-dalam astana.
Surohan dari-pada tuan putĕri
Sĕkarang malam beta ka-sana.

The princess replies:—

Tĕtak bĕngkawan sa-bĕrang sana,
Tĕrpĕnggal ka-batang pĕlpari.
Jika tuan orang bijaksana,
Silakan abang chuba ka-mari.

She prepares a feast and gorgeously attired reclines on her couch reading the romance called "Perbu Jangga." Our hero takes a spike of grass and turning it into a flying steed flies and enters her bower. He speaks in verse:—

Chĕmpĕdak bĕrbuah di-dalam pĕkan,
Mĕmbĕlah-bĕlah tĕngah pĕmatang.
Jika tidak pun di-pĕrsilakan,
Mĕnĕngar sudah tuan beta datang.

The waiting-maids reply:—

Buloh di-bĕlah di-tĕpi kota,
Mĕlpari chĕndĕrong ka-lubok.
Oleh itu-lah patek pĕrsĕmbahkan
Dari-pada bĕrdiri baik-lah dudok.

He walks past the princess' curtains, saying:—

Chĕmpĕdak di-karang Dang Kĕmbayat.
Bĕkas bĕradu di-dalam bilek.
Siapa gĕrangan mĕmbacha hikayat
Suara-nya tĕrlantas ka-rumah Malik.

The princess accosts him:—

Bunga di-karang oleh dang Mĕrdu Lela
Akan sunting di-dalam chĕmbul.
Siapa gĕrangan bĕrtanya itu?
Madah-nya datang sĕrta chumbu.

They feast and bandy love-verses. At last the hero calls to his steed and returns to Malik Indra's hut. He wanders and finds two genies atop a hill disputing whose shall be a bow and magic arrow, one having found the bow and the other the arrow. The arrow can be called by the archer. Our hero offers to settle the dispute, and discharging the arrow bids them race for it, but he himself recalls it to the bow and takes it to Malik Indra's house. His intrigue with Princess Chindra Nur Lela is disturbed by the arrival of her affianced suitor. The princess' father Raja Gangga Wijaya sends to fetch her but she refuses to go. The hero calls forth the four warrior genies from the casket Narada gave him and they and their soldiers defeat all Raja Gangga Wijaya's men, while the hero toys with his beloved. Raja Gangga Wijaya in despair informs his daughter's suitor. A great battle ensues. One side is ranged in the battle order known as "the writhing dragon" (*naga bĕrbĕlit*), the other in the order of "the gnashing dragon" (*naga bĕrgigit*). Arrows are fired that turn to fire and rain and so on. The hero and his rival change into many-headed many-handed demons, dragons, snakes. Indra Warna fires his magic arrow Dewa Laksana, which Putra Jaya Pati spits at and turns to water. Putra Jaya Pati fires the arrows given to him by Narada and slays Raja Indra Warna, whose army is broken and flees.

Raja Gangga Wijaya and his son Raja Indra Samandra Lela had refrained from helping Indra Warna because he had started the battle without consulting them.

Putra Jaya Pati feasts with his warrior genies and takes his ease with the princess.

Now a genie who saw the battle had flown and announced the tidings to the forty princes who had been fellow pupils of the hero under Narada. They take leave of their teacher and come in a cavalcade to visit Putra Jaya Pati. Two go and make peace with the princess' father and take the hero into his presence. Putra Jaya Pati weds the princess and is escorted seven times in a seven-tiered car round the palace. All the women run to see him and fall in love with him:—a passage recalling the account of the admiration of women for Hang Tuah, given in the *Sĕjarah Mĕlayu* and *Ht. Hang Tuah.*

The hero takes his bride to the home of his parents, passing on the way a subject kingdom Beranta Pura Nilam Dewata. His father abdicates and he becomes ruler of Langkam Jaya with the title Maharaja Bikrama Indra Dewa or Paduka Sri Sultan Putra Jaya Pati Sifat Ala'u'-d-din Shah.

In plot this romance is little more than a short redaction of the *Hikayat Indraputra.* The princeling who astrologers prophesy will be carried off by a four-legged creatire, who on his travels eats shell-fish that come to life when the shells are cast back into the water, who is warned by a skull that a fierce demon haunts the lake, who defeats the demon by pretending to sleep, who stays with a gardener and flies by night into a princess' bower, who is helped by warrior genies in his fight for the princess' hand, who returns home at last with his bride and succeeds his father as Sultan—all these episodes occur in the longer romance.

Parallels to the tale from Indian folklore are given in my article on the *Hikayat Indraputra* in this number of the Journal.

The many quatrains in the tale should be of interest to students of the *pantun.*

Hikayat Indra Bangsawan.

By R. O. Winstedt D. Litt. (Oxon.)

There are six MSS. of this tale at Batavia (van Ronkel's "Catalogue," pp. 191-194), one of which has been published in Romanised Malay by the "Commissie voor de Volkslectuur" and used by me for this paper:—it is, if I may say so, a defect of the "Commissie's" publications that they do not record from which Mss. their texts are printed. There is another Ms. at Berlin (Koenigl. Bibliotheek, Collection Schumann V, 21).

Lithographed editions were published in Singapore in 1310 and 1323 A.H.

There is also an Achehnese version (Snouck Hurgronje's "The Achehnese," vol. II pp. 145-7.)

I give an outline of the romance with parallels from Indian tales:—

Indra Bangsawan, ruler of Kobat Shahrial was childless. In answer to prayers of the pious his consort Siti Kendi bore twins, Shah Pri and Indra Bangsawan. With the elder was born an arrow, with the younger a sword. The boys learnt religion from Mua'alim Sufian and studied the arts of war. Their father fears jealousy and strife if he selects openly one of his sons to succeed him. So he tells how he has dreamt of a magic bamboo instrument (*buloh pĕrindu*) and how whoever gets it is fated to be king. The boys go on the quest and are parted in a storm.

Shah Pri comes to a deserted bower and finding a drum beats it. A princess hidden in the drum bids him refrain. He slits the drum and out steps Princess Dewi Ratna Sari. She explains how the country of her father Raja Asik-Asikin has been destroyed by a roc (*gĕroda*) and how she and her eight maids in a casket (*chĕmbul*) had been hidden in the drum. Shah Pri kills the roc with his arrow and weds the princess.

Meanwhile Indra Bangsawan comes to a cave, enters it and finds a garden with a house inhabited by a demon (*raksasa*), who receives him hospitably. The demon tells him he is in the country Anta Beranta ruled by Raja Kabir but subject to a monster, Buraksa, who claims any child born to Raja Kabir. Nine princes are suitors for Ratna Kemala Sari, the daughter of Raja Kabir, who will give her to him who can slay Buraksa and brings as evidence of his death the seven eyes and seven noses of the monster. The friendly demon gives Indra Bangsawan a magic garment which will change him into any shape, and a charm (*isharat*) which will take him to Anta Beranta. He chooses the guise of a curly-haired jungle boy, and is made the slave of Ratna Kemala Sari, who calls him Hutan, "Jungle," and gives him two goats. She relates how she is fated to be freed from Buraksa by Indra Bangsawan and how she is a cousin of Dewi Ratna Sari, whom Shah Pri has rescued from a roc.

Ratna Kemala Sari falls sick. Astrologers declare that only the milk of a tigress that has just whelped will cure her eyes. Hutan pours goat's milk into a bamboo and hangs it on a tree; then resuming his former shape he sits beside the tree. The nine princely suitors see the vessel of milk and ask what it is. "The milk of a tigress who has just whelped," says Indra Bangsawan. "The owner enjoined that it may not be sold but given only to any person who may be willing to have his thigh branded." The nine princes submit to branding, and get the milk. But the medicine-men declare it is only goat's milk! Meanwhile the friendly demon (*raksasa*) gets a tigress' milk for Indra Bangsawan. In the guise of Hutan he takes it to the princess and tells how hunting for his straying goats he had found it hanging from a tree. The sight of the princess is restored.

The time comes to deliver princess Ratna Kemala Sari to Buraksa. Her father builds a bower outside the country with an iron tank beneath its steps, as a place where Buraksa can drink water impregnated with iron and the nine suitors can fight for the princess. Hutan follows his mistress and she changes his name to Kembar. He gets his friendly demon to help him slay Buraksa. The demon gives him a black (*hijau*) horse, Janggi Harjin, whereon Indra Bangsawan rides as a prince to his mistress' bower. Instructed by the demon, he ties the bridle of his horse to the water tank so as to noose Buraksa when he comes to drink, and bids the horse kick the monster. He pretends he is a nameless wanderer come to see the nine suitors slay Buraksa. But he takes the terrified princess in his arms when Buraksa arrives. Buraksa is noosed. Indra Bangsawan slays the monster, cuts off his seven noses and seven eyes and rides away. The nine suitors come and finding eyes and noses gone, cut off ears, scalp, fingers, hands and feet as evidence of their prowess. Indra Bangsawan having reentered his magic garment arrives with the eyes and noses of the monster, modestly saying he had kicked against them in the jungle and taking them for the skin of an ant-eater (*tĕnggiling*), had brought them for the princess to burn in her incense. The prince gives his daughter to Si-Kembar in return for his two acts of prowess. Si-Kembar pretends still to be a jungle slave and refuses to marry her.

The nine suitors attack Anta Beranta, sending a rude letter which read by the priest Shaikh Aladin rouses the ruler's ire. Si-Kembar hurries by night to the friendly demon for sword and steed. At dawn "before the stars have faded, or beasts wake to seek their prey or birds start to preen their feathers" the armies meet. Indra Bangsawan saves the day, charging "like a scorpion into fire." Then he vanishes. The next day he saves the fight again, and again vanishes. No one knows who he may be. Si-Kembar is missing from the palace. They guess he is the hero. Raja Kabir is hard pressed while Si-Kembar stays five days at the friendly demon's house. At last Raja Kabir alone is left in the field. Finally Indra Bangsawan comes, escorts him into the fort and alone faces the nine suitors whose men have all fled. They recognize him as the prince who sold the goat's milk. He reveals his name. They beg for pardon and that he may not reveal the shame of their branding.

Indra Bangsawan visits the friendly demon, dons his magic raiment and returns to the princess as Si-Kembar. Raja Kabir asks why their marriage is not consummated. The princess says Si-Kembar is unwilling. The kathi sentences both to be imprisoned in a cage in the palace. In the night Si-Kembar (the jungle boy whose race never bathes!) feels hot and uses the princess' bathing water, slipping out of his magic raiment. The princess marvels and asking to be released tells her father. Her father bids her pretend to sleep and seize Si-Kembar's magic raiment. The device succeeds. She recognizes in Si-Kembar the prince who slew the monster (*buraksa*). He is taken to Raja Kabir but pleads for three days' grace to visit the friendly demon. He calls his magic steed which comes miraculously. The princely demon gives him a magic stone, which will give him whatever he desires, even a kingdom and people under the command of Dekar Sari and Dekar Dewa. Indra Bangsawan journeys to Anta Beranta Permana where he orders the two Dekars to make him a kingdom with a court and people and a bower with a bridge of gold up to the bower of Dewa Ratna Kemala Sari, and to inform her father that on the morrow when the nine princes have come the wedding feast will begin. In due course Indra Bangsawan and his bride are enthroned on a seven-tiered stand (*pancha-pĕrsada*) and taken in procession and married by Kadzi Fa'alu'd-din. The bride is magnificently arrayed:—

bĕrbaju kĕsumba murub pinar ĕmas, bĕrurap-urap sari jayeng kĕkatun, bĕrpĕdaka susun tĕlor, bĕrtali leher tiga bĕlit, bĕranting-anting kasna janoh pĕrbuatan Sailan, bĕrchinchin pĕrmata di-apit dĕngan intan ikatan Sailan, bĕrgĕlang tiga sa-bĕlah pĕrbuatan Pariaman, bĕrkilat-kilat bulu naga suir, bĕrsĕkar suhun, bĕrsifat alis manisan bĕrchĕlak sĕni bibir-nya merah bĕrtĕmu urat. dan gigi-nya sapĕrti dĕlima mĕrĕkah lidah-nya sapĕrti chĕrmin.

Indra Bangsawan pretending to visit his goat, goes and begs the magic bamboo instrument (*buloh pĕrindu*) from the friendly demon and takes leave of his parents-in-law, purporting to take his bride to visit his own parents, and his brother Shah Pri with his bride Dewi Ratna Sari. But by the magic of a sister of the monster (*buraksa*) whom Indra Bangsawan had slain, he and his consort fall sick unto death.

Now one night Shah Pri dreamt he met Indra Bangsawan on the top of a high mountain. Next day he sets out to find him, taking a magic stone which dipped in water renders it efficacious to cure folk sick unto death. Disguised as a shaikh he enters Anta Beranta Permana and after curing Indra Bangsawan hands him magic water to cure his bride. In gratitude Indra Bangsawan bestows on Shah Pri his own magic stone that can create a kingdom. Accompanied by the nine princes, they set out and visit Dewi Ratna Sari and the hero's parents. Indra Bangsawan presents the magic bamboo instrument to his father who abdicates in his favour. All live happily ever afterwards.

Princes being born, one along with an arrow the other with a sword, find many parallels in Malay and Indian literature (Winstedt's "Literature of Malay Folk-lore," p. 30). The incident of a land destroyed by a roc (*garoda*) occurs also in the *Hikayat Maalim Dewa* (ed. Winstedt and Sturrock, pp. 9 and 94-97 and Snouck Hurgronje's "The Achehnese," vol. II, p. 127.)

In his paper on the Romance of the Rose in Malay literature (*Tijd. v. Ind. T. L. en Vk., deel LIV, afd. 5 and 6*) Professor van Ronkel has pointed put how several episodes, the search for the magic bamboo and for a medicine, and the incident of the branding, occur also in the *Hikayat Gul Bakawali,* a Malay Romance from the Hindustani version of 1702 A.D. by Nihal Chand (Garcin de Tassy, Histoire de la littérature hindouie et hindoustanie, tome II, p. 468) of which there is also a Ceylon folk version (Parker's "Village Folk-Tales of Ceylon," vol. I, No. 22, pp. 173-177). Again in the *Hikayat Pĕkar Madi* (van Ronkel's Catalogue of Malay MSS. at Batavia, pp. 167-171) occur the episodes of branding and of a quest for medicine for a prince. There are many parallels in Indian folk-lore for incidents in the *Hikayat Indra Bangsawan.* In Knowles' "Folk-Tales of Kashmir" (2nd ed., p. 365) a prince disguised as a gardener is married by a princess. Her relations jealous at this arrange a hunt and leave the hero only a vicious mare to ride. He reached the jungle first, shot jackal, bear and leopard, and cut off the tail of the first, the nose of the second and the ear of the third, which he produced when the others who had shot no game exhibited the three corpses as evidence of their prowess (Cf. an episode in the *Hang Tuah,* J. R. A. S., S. B. 83, p. 117). In Mary Stokes' "Indian Fairy Tales" (p. 41) a prince born with a removable monkey-skin has it burnt by his wife and retains his human form; (p. 130) a similar hunt is arranged, the prince disguised as a labourer brands the backs of the six princes, who had found no game and begged a meal from him, and afterwards exposes them.

Hikayat Parang Puting

By R. O. Winstedt D. Litt. (Oxon.)

All the recorded MSS. of this tale are in English libraries. There are two copies in the library of the India Office and one in King's College Library (*J. R. A. S., S. B.* No. 82, 1920 p. 156; *Essays relating to Indo-China,* 2nd series, vol. II, p. 53). Mr. R. J. Wilkinson has given a MS. of it to Cambridge University Library. The present paper is founded on a MS. in the possession of the Committee for Malay Studies, Kuala Lumpur. This MS. is modern (1920 A.D.) written in Singapore but exhibiting in *patek apa* to express the plural "all your servants" traces of a Kedah copyist: it fills 139 pages of a note-book.

There are no references to Allah or Islam in the tale. Betara Brahma is the Supreme God and the world is governed by the "high great gods" (*dewata mulia raya*). There is mention of a *silambara* (Skt.) where a princess chooses a husband from a crowd of rivals.

There are only two quatrains in the tale, uttered by the hero when he is on the princess' raft beset by dragons:—

Dian dua, damar pun dua,
Tanglong di-rumah Dewa Laksamana.
Diam juga, sabar-lah jua,
Ada untong tiada ka-mana.

Ĕnche' Baya sĕlendang batek,
Pandai mĕngarang bunga di-ukir.
Adohai tuanku! junjongan patek!
Jangan-lah tuanku bĕrbanyak fikir.

The process by which a pleasance is created by a magic stone is described as putting the stone exposed on the spot where the pleasance is wanted: by taking it up the hero causes the pleasance to disappear (*Maka Mambang Dewa Kĕindĕraan pun mĕngambil guliga hikmat-nya yang di-tambangkan-nya pada taman itu: maka taman itu pun ghaib-lah dĕngan sa-kĕtika itu juga.*)

There are numerous Indian parallels for the main plot, tales of a prince who buys a snake, a parrot and a rat (*Jataka,* No. 73. vol. I, p. 178) or kitten and snake, or cat, otter, rat and snake, and is taken in all the tales by the snake to his father the king of the snakes who gives the hero a ring that will create a palace and kingdom and bring him a royal bride. (*The Story of Madana Kama Raja*: Natesa Sastri, p. 20; Bodding's *Folklore of the Santal Parganas* p. 88; Thornhill's *Indian Fairy Tales* p. 67; Mrs F. A. Steel's *Tales of the Punjab,* p. 185; Knowles' *Folk-Tales of Kashmir,* 2nd ed., p. 20; Parker's *Village Folk-tales of Ceylon,* vol. III, pp. 127-131.)

The incident of a dragon growing too big for a river occurs also in the Perak folk-tale *Raja Budiman* (ed.—Clifford, Singapore, p. 5) and in the Achehnese *Hikayat Banta Ahmat* (Snouck Hurgronje's "The Achehnese," vol. II, p. 142).

The following is the outline of the story:—

Prince Dewa Laksana Dewa ruled in fairy-land. His consort Chahaya Khairan bore a beautiful daughter Putri Langkam Chahaya. One day when she was plucking flowers in the pleasance, a fairy (*dewa*) Mambang Indra Segara espied her and fell in love. He cast a spell on a grass-hopper and sent him to fly and settle on the princess and awaken in her thoughts of love. Then wearing his creese and burning "as if he would set fairy-land afire," he entered the pleasance. The princess sent a maid to call him. His hot words of love call forth her reproof and she bids him seek her parents. He flies away in dudgeon and resolves to bring a sickness upon her. He is sleepless till the dawn when "the cocks crowed, the birds of paradise (*chĕnderawaseh*) sang in the heavens, parrots sang in the *angsoka* trees, parroquets on the boughs of the *nagasari,* mynahs on the *chĕmpaka* trees and a drizzle of rain made all the flowers in the garden bloom."

After waiting seven days he charms (*puja*) a frangipanni flower and throws it into the bosom of the princess as she and her maids are picking flowers. She becomes pregnant. Her father curses her and changing her into the form of an ugly mortal woman casts her down into the world. She bears a child in the forest. She lives in an abandoned hut, at first begging rice and cooking-pots and later pounding rice for hire. One day in her absence, while her boy is playing under the house, a stranger offers to sell him a young snake for half a coconut-shell full of rice. He buys the snake and makes it his plaything day and night. Another day he buys a young hawk and later a white rat. The snake grows the horns (*chula*) and claws of a dragon. The boy rides about on the dragon's back and other children give fruit in return for permission to play with the hero. The harbour-master (*shahbandar*) hears of it and sends for the boy who goes riding on his dragon with the young hawk flying above his head and the white rat following. He is given fruit and rice and raiment. The Raja of the country hears of the marvel and sends for the boy to come on his dragon. He bestows on him rice, raiment and two slaves (*sahaya*).

One night the dragon who has grown so big he cannot bathe in the river without flooding the country decides to run away to the lake where his father and himself live. His little master follows and overtakes him. The dragon's grandsire, a terrible beast, gives him a ring out of his mouth which in a moment can provide food for a thousand men. He bids the boy call upon his whilom plaything if ever he needs his help. The hawk and the white rat take leave of their dragon playmate.

The hero's mother is in great distress at the disappearance of her son. On his return he loses his way in the forest. His dragon's granddam, angry at hearing that the magic ring has been given to the boy, sends a warrior dragon to ask for it back in return for a magic stick. The dragon finds the boy. When he goes to bathe in a pool, the boy siezes the stick and striking the pool thrice prevents the dragon from leaving it. He hurries away, taking the magic stick. He hears the sound of men felling in the jungle and going near espies a masterless knife (*parang puting*) felling a tree. At sight of him the knife runs off to a hut where an old man lives. The hero spends the night at the hut and shaking his magic stick provides food for them both. The old man gives him in return for the magic stick his knife which will obey all behests and can enlarge itself and fight foes. Our hero reaches home and goes to pay his greeting to the harbour-master. Always he provides cooked food for his mother and himself by means of the magic ring.

Now the ruler of the country, Raja Indra Mahadewa was childless. He went to the island Chahaya Permana (ڤرمان) to pay vows that he may get an heir. He and his consort bathed in a lake on the island, prayed and burnt incense. Betara Kala heard the prayer and dropped a manggo in the king's path as he went up from the lake. There was no manggo tree in the neighbourhood. The king accepted it as a sign, and he and his wife partook of the fruit. On their return a dragon bars the bark's way and the king induces him to desist by promising that his child if a girl shall be the dragon's wife, if a boy his friend. The queen bears a daughter "Princess Mengindra, First Day of the Moon." The dragon king sends a lobster to see if the king has got a child. The lobster hiding at a royal landing-stage hears maids grumbling at having to carry up bathing water for the princess. He bids a prawn enter one of the water-vessels and report on the beauty of the princess. The lobster conveys the tale of her loveliness to the dragon king. The dragon king sends one of his warrior dragons to block the estuary of the country of Raja Indra Mengindra and flood the land so that he may remember his promise. A warrior goes down to the estuary and questions the dragon. The king asks for three months' grace, wherein to prepare for the nuptials. His viziers advise him to offer his daughter's hand to whosoever can worst the dragon king. The king sends missives accordingly to the neighbouring princess and all accept the offer. He puts his daughter on a raft in an iron chest and all the princes who have accepted the challenge on other rafts and sends them down to the estuary where the dragon waits. Leaving the hawk and the white rat to look after his mother, our hero takes his magic ring and knife and goes aboard the princess' raft where he is allowed to stay. At the estuary the waiting dragon scatters the rafts of the princes with his breath and bids our hero leave the raft of the princess.

The princess promises him her hand if he can worst the dragon suitor. He bids his magic knife decapitate the dragons who approach the raft. The princess and her maids are hungry. The hero's magic ring provides food. He invokes his young hawk and all the hawk tribe fly off with the raft back to the shore, pecking the eyes of all dragons that approach. The king of the dragons sends a huge warrior dragon who swallows the raft with all its crew. The hero by means of his magic ring provides food and lamps. The hawk flys and tells the white rat of his master's predicament. The white rat seeks Mambang Indra Segara who comes with his forces. A great battle follows. The dragons kills the fairy warriors with the blasts and fires of their nostrils. The fairies slay the dragons with arrows. Mambang Indra Segara bids the young hawk enter the dragon's belly and see if his grandson and the princess are alive. The young hawk protests that he is unable and the white rat enters and finds them still alive. The hero bids him tell the fairies to attack the other dragons. He orders his knife to cut the heart of the dragon that has swallowed them and then to cut through the dragon's body and release them. Mambang Indra Segara sends Mambang Ratna Dewa to fetch his son whom he names Mambang Dewa Keindraan.

Mambang Indra Segara creates a country and castle by means of a magic jewel. He provides food by means of a ring. Their army is put under four leaders, Mambang Ratna Dewa, Mambang Gangga Dewa, Mambang Beranta Dewa and Dewa Keindraan. But when a great dragon (*Naga Gĕntala*) arrives they are so hard pressed that the hero hugging his body invokes his whilom dragon playmate, Naga Ratna Gempita, to their aid. Naga Gentala cannot prevail and returning to the dragon king, Raja Gangga Indra, advises him to make peace. Raja Gangga Indra and all his warriors enter the fray. Ratna Gempita attacks him. The rival dragons turn themselves into crow and hawk, ape, (*bĕrok*) and tusked monster (*gĕrgasi*), harpy and roe. Ratna Gempita bites the neck of the harpy and so Raja Gangga Indra dies. Ratna Gempita becomes king of all the dragons. He tows the raft of the princess up-stream. The hero's father retires to fairy-land, leaving him the magic stone which can make cities and bidding his son call him at need. The hero leaves the princess' raft when it approaches the royal settlement. All the princely suitors for her hand seeing her raft drifting on the tide rush and welcome her. They pretend they have saved her from the dragon. Her father builds a dais on a plain where the princess shall sit and choose the prince she favours (*di-buat silambara di-tĕngah padang*, p. 110) by throwing him a posy of golden flowers. All the princes, all the chiefs and people of the country, even the halt and blind pass before the princess but she does not throw the posy. At last the hero is told to pass before her. He passes carrying his magic knife, the hawk flying above his head, the white rat following him. The princess throws the golden flowers on him. The 99 princes demand that the marriage shall take place after a procession to the palace (*bĕrtandang*), hoping to kill the bride-groom on the way. By means of his father's magic stone the hero creates a city and palace and castle. The white rat, who is really Raja Indra Bayu in animal shape, goes to fairy-land and invites Mambang Indra Segara and his younger son Mambang Ratna Dewa to the wedding. The harbour-master comes and with limbs and beard trembling and face as "white as a pealed mushroom," sees the city and palace the hero has created, understands he is a fairy prince and does obeisance. The princess' father hears music and sends viziers to see what it portends. They are fed by means of the magic ring and return and tell their master of the city and palace and its furniture. The king sends his future son-in-law word that the 99 princes will attack him during the wedding procession. The hero begs him not to prevent them. Mambang Indra Segara descends to earth on a magic carpet (*hamparan kĕsaktian*). The hero's mother sorrows over her mortal form. The young hawk who is really a fairy Darkasila (دركاسيل) flies to fairy-land and pleads for her with Dewa Laksana Dewa, who with his consort descends to earth for his grand-child's wedding after begging Dewa Betara Brahma to restore to his daughter her fairy shape. On a moonlight night Betara Brahma descends and sprinkling Princess Langkam Chahaya with golden flowers and rainbow water (*ayer pancha rona dari kĕyangan*) restores her fairy beauty, addressing her as "Blue Lotus." The hero goes to the wedding on the flying carpet. Darkasila and his hawks fight the followers of the 99 princes. After the wedding Dewa Laksana Dewa and his fairy followers fly up to fairy-land on a magic carpet. A marriage is arranged at last between the hero's mother and Mambang Indra Segara. The hero picks up his magic stone. City and castle vanish. He and his bride and her father set out for home. The 99 princes waylay them but let the father pass. By his magic stone the hero creates a pleasance. His magic knife fights the princess. Fifty of them surrender and later fight the remaining 49 but fail to worst them whereupon the hero calls his dragon friend Ratna Gempita to capture them:—the magic knife would kill them and the hawks blind them. All the princes who escape death acknowledge the hero's suzerainty. The hero releases the hawk and the white rat to return to fairy-land, whence they visit him often. He rules the kingdom of Indra Mahadewa happily with his consort.

Penang Malay

By A. W. Hamilton.

To any one whose knowledge of Malay has been acquired from the various text books on the subject, with their correct orthography, it comes as rather a shock to find, on arrival in Penang, that he is unable to follow even the simplest conversation between two natives of the place, and that his own Malay, although understood, is not the colloquial of the Northern Settlement.

Before long, however, the stranger begins to observe that his difficulties lie in well defined directions; and that the body of the language remains much the same as that to which he has been accustomed, so that after a few months the newcomer should have little trouble in conversing in the same strain as his hearers. The differences between the so-called "Penang Malay," which is really the Malay of Kedah altered slightly to suit the needs of a cosmopolitan town population with a large element of Southern Indians from the Madras Presidency, and "Singapore Malay," which is a similar corruption of the speech of Johore to meet the requirements of a busy mart dealing with many races and much influenced by its proximity to Java, come mainly under six heads:—

1. Harshness in pronunciation.
2. The alteration of a final "*l*" into "*i*".
3. The clipping of certain common words.
4. The use of peculiar idioms and idiomatic constructions.
5. The use of words not in common use elsewhere, or confined in use to Kedah.
6. The inclusion of words of Indian origin sometimes to the exclusion of native Malay words.

1. Dealing with the above seriatim, in Johore Malay the pronunciation is always soft, especially that of a final syllable, so much so indeed that a final *a* is never pronounced as the long *a* in *father* but dies away as the sound of the *er* in the same word, so that *father* could be transcribed as *fā tha* to a reader of romanised Malay in Johore. In Penang speech on the other hand the letter *a* is always given its full sound of a long *ā* or *ah* even at the end of a word, so that *apa* (*ā pa*) "what" with its mute final *a* in Johore, becomes *ā pā; ma na,* "where" becomes *mā nā; di a* "he" becomes *di ā; rā ja* "a king" becomes *rā jā.* In Johore the letter *r* though pronounced distinctly is never rolled as in Javanese and when appearing as a final is pronounced ever so slightly, so that *kotor* "dirty" could almost be written as *ko taw,* and *akar* "a root" *ā kā*

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both *a*'s being long. In Penang the letter *r* though not rolled is pronounced in a peculiar gurgling manner at the back of the throat except it be a final when it is pronounced with a steely ring which often makes it difficult to distinguish from a final *k* which as elsewhere is always enclitic.

Ayer "Water" is thus pronounced as if it were *ayak* "a sieve;" *nyior* "a coconut" as if it were spelt *nyiok; bochor* "leaky" as if it were spelt *bochok; dĕngar* "to hear" as if it had been *dĕngak; ajar* "to teach" as if it were spelt *ajak* "to invite." *Apa khabar?* "What's the news? How are you?" is often heard as *Apa habak* the initial *kh* being changed to *h* for assonance in conjunction with the alteration of the sound of the final *r* to *k*. Words ending in the letter *r* but having *i* as the penultimate letter on the other hand are pronounced as if the final syllable were *iak* and not *ir*.

Pikir,	"to think"	becomes	*pikiak.*
Pasir,	"sand"	,,	*pasiak.*
Kikir,	"a file"	,,	*kikiak.*
Hampir,	"near"	,,	*hampiak.*
Gambir,	"gambier"	,,	*gambiak.*

Another peculiarity of Penang pronunciation is the indistinct utterance of ultimate syllables ending in *s* which are shortened and articulated quickly, resulting in the letter *s* being sounded as if it were *ih,* so that *bĕras* "rice" sounds like *bĕraih; pĕdas,*" pungent" as *pĕdaih*; *lĕkas,* "quickly" as *lĕkaih* and *atas,* "above" as *ataih.* Similarly *bagus,* "fine" is pronounced *baguih; bungkus,* "a bundle" as *bungkuih* and *mampus,* "to die" as *mampuih*: whilst words ending in *is* merely change the *s* into *h; tulis,* "to write" being pronounced as *tulih*; *baris,* "a line" as *barih*: *kĕris,* "a dagger" as *kĕrih*: and *chĕngis,* "crosslooking" as *chĕngih.*

2. The alteration of a final *l* into *i*.

One of the most puzzling features of the Penang dialect is the substitution of an *i* for a final *l,* whereby even common words appear strange under their new guise, and in a few instances have to be recognised from the context as being different to the words similarly pronounced but spelt differently; instances in point being *bantal,* "a pillow" which is pronounced *bantai* and is liable to be mistaken for *bantai,* "to thrash, to slaughter" and *tangkal,* "a charm" pronounced *tangkai* and liable to be confused with *tangkai,* "a stem." In those cases where the penultimate letter is *i* the sound of the final *l* does not become *i* as usual but is elided and the sound of the penultimate *i* is changed to *e* so that *katil,* "a bedstead" is pronounced *kate.*

The following list gives the majority of common words ending in *l* and their pronunciation.

Ajal	allotted span of life	*ajai*
Akal	intelligence	*akai*
Aral	hindrance	*arai*
Asal	origin	*asai*
Awal	early	*awai*
Bachul	spiritless	*bachoi*
Batal	to repeal	*batai*
Bakul	a basket	*bakui*
Bawal	a pomfret	*bawai*
Basal	a jaundiced swelling	*basai*
Bangsal	a shed	*bangsai*
Bětul	correct	*bětui*
Běbal	stupid	*běbai*
Bisul	a boil	*bisui*
Bilal	a muezzin	*bilai*
Bogil	naked	*boge*
Botol	a bottle	*botoi*
Chěngal	the name of a wood	*chěngai*
Changkol	a mattock, a hoe	*changkoi*
Chungkil	to pick out with a pointed instrument	*chungke*
Dajal	wicked, mischievous	*dajai*
Dodol	a kind of sweetmeat	*dodoi*
Dogol	hornless	*dogoi*
Ěndul	a hammock	*ěndui*
Gatal	itchiness	*gatai*
Gasal	odd	*gasai*
Gěmpal	stout	*gěmpai*
Gomol	to strive as in wrestling	*gomoi*
Halal	legitimate	*halai*
Hemul	officious intrusion	*hemui*
Ikal	curly	*ikai*
Janggal	discordant	*janggai*
Jambul	a fruit	*jambui*
Jějal	to cram into a hole	*jějai*
Jěrěmal	a fishing stake	*jěrěmai*
Jěngkal	a span	*jěngkai*
Jual	to sell	*juai*
Kapal	a ship	*kapai*
Katil	a bed	*kate*
Kěkal	lasting	*kěkai*
Kědal	a black discolouration of the skin	*kědai*
Kěpul	1/16 gantang	*kěpui*
Kěnal	to know a person	*kěnai*
Kidal	left handed	*kidai*
Mahal	expensive	*mahai*
Měngkal	half ripe	*měngkai*
Nakal	mischievous	*nakai*
Pangkal	beginning	*pangkai*
Pasal	reason	*pasai*
Panggil	to call	*pangge*

Pĕdal	the gizzard	*pĕdai*
Pĕjal	firm of flesh	*pĕjai*
Pikul	to carry on the shoulder	*pikui*
Pukul	to hit	*pukui*
Rugul	to rape	*rugui*
Sambal	condiments	*sambai*
Sakal	to knock against	*sakai*
Sangkal	to deny	*sangkai*
Sĕsal	to regret	*sĕsai*
Sĕndal	to wedge	*sĕndai*
Simpul	to tie	*simpui*
Sial	ill omened	*siai*
Takal	a pulley	*takai*
Tampal	to patch	*tampai*
Tanggal	loosening	*tanggai*
Tangkal	a talisman	*tangkai*
Tangkul	a net lifted by a lever	*tangkui*
Tĕtal	thick (compressed)	*tĕtai*
Tĕbal	thick	*tĕbai*
Timbul	to float	*timbui*
Tinggal	to leave behind	*tinggai*
Tumpul	blunt	*tumpui*
Tunjal	to thrust downwards	*tunjai*
Wakil	an attorney	*wake*

3. The clipping of certain common words.

The number of words clipped is small but as several are words in everyday use, it is as well to master them straight away.

The most important of these words are,

mari	" to come," which is shortened to *mai*
pĕrgi	" to go " which is shortened to *pi*
Saya baru mai	" I have just come "
Hang pi-lah	" Go away! "

Similarly *ini* " this " and *itu* " that " are usually contracted to *ni* and *tu* which also serve as contractions for *sini* " here " and *situ* " there," the last named being also sometimes represented by *nu*.

" There he is "	*nu dia.*
" Do you want this or that? "	*hang mahu yang ni-kah yang tu?*
" Here it is. "	*ni dia.*
" That chair."	*kĕrosi tu.*
" Like this."	*macham ni.*
" Like that."	*macham tu.*
" About this matter."	*pasai ni.*
" Re that."	*pasai tu.*
" Who is that? "	*sapa tu?*

The contractions *ni, nu,* and *tu* with the addition of the word *dia*, "he" or "she," contracted to "*de*" form the new combinations of *deni*, " this person or party " i.e. *dia ini, detu*, "that person or party " i.e. *dia itu* and the vaguer *denu*, " those people."

"This party would like to come to a settlement but the others don't want to."	*Deni suka nak buat sělěsai, denu ta mahu.*
"Why did you strike him?"	*Awat hang pukui detu?*

The word *těntang* "facing," when contracted to *tang* is combined with *ni* "this" and *tu* "that" to mean "in this or that spot or place":—

I am in pain about this spot.	*Saya sakit tang ni*
Go and put it over there.	*Hang pi taroh tang tu.*
I don't know where it has got lost.	*Tang mana dia pi hilang pun ta' tahu-lah.*
He was sitting at the table	*Dia dudok tang meja.*
That portion is alright but this is defective	*Tang tu bagus dah, tapi tang ni-lah nampak chachat.*

The word *ikut* "to follow" when used in the sense of "along" or "through" is usually contracted to *kut* (*kot*), thus:—

"By which road did you come?"	*Hang mai kot jalan mana?*
"The thief came through by the back"	*Pěnchuri tu masok kot bělakang.*

The verb *dudok* "to sit, to dwell," is frequently shortened to *dok*:—

"Where do you live, sir?"	*Tuan dok di-mana?*
"Pray remain seated. I am going."	*Dok-lah. Saya nak pulang.*

Dok-lah is a common substitute for our "good-bye."

The final *h* in the intensifying article *lah* is not pronounced in Penang, the word being enunciated as *la* with a long *ā* sound.

Sudah "to finish," naturally becomes *dah*:—

"He has gone."	*Dia dah pi.*
"He has finished doing it."	*Dia buat, dah* or *dia dah buat.*

The more usual query in Singapore of *měngapa* "why," or *apa sěbab* "for what reason," is almost invariably expressed in Penang by the one word *awat*, a contraction of *apa buat* "what's to do" etc., though *pasal apa* "for what reason," pronounced as *pasai apa,* is also frequently heard.

"Why were you dismissed?"	*Awat hang kěna buang kěrja?*
"Why is the train late?"	*Awat kěreta api ni lambat?*
"Why did you not do it?"	*Awat ta' buat?*
"What do you want? What is the matter?"	*Awat?*

The usual abbreviations of *ta'* for *tidak, nak* for *hěndak* and *ta'andak* for *ta' hěndak* hold good in Penang as elsewhere:—

"I don't want it"	*Saya ta mahu* or *Saya ta'ndak.*

"Where are you going?" *Nak pi mana* or *ka-mana? Nak ka-mana?* is a common greeting to a person met on the road, usually replied to by *ta' pi mana* "I am not going anywhere in particular;" or *saja aku běrjalan,* "just out for a walk," or some definite statement of fact as, *nak pi kědai,* "am going shopping."

Dak is used for *tidak* as a negation.

"Did you do it? No." *Hang kah-buat? Dak. Oe!*

Oe is more or less a meaningless exclamation like Oh! usually denoting grief or pain as in the phrase *Adoi mak oe!*, "Alas mother oh!" but in hailing or in reply to a hail merely means "ahoy" or "yes."

Boat ahoy! *sampan oe!*
Oh brother Mat! *O, bang Mat!* (answer) *Oe*, "Yes."

In connection with *dak* is a little phrase *buat dak* meaning "to do" *i.e.* "to act (as if) nothing (had happened)"; "to appear quite unconscious of what" is afoot (*buat ta' tahu*).

"When I passed he was gambling at the side of the road but I acted as if I had not noticed anything." *Waktu saya lalu dia dok main judi di-tĕpi jalan tĕtapi saya buat dak.*

The usual abbreviations of the terms for kindred are in use as

bang	for	*abang*
kak	,,	*kakak*
pak	,,	*bapa*
tok	,,	*datok*
che'	,,	*ĕnche'*

and the less common

nek	for	*nenek*
dek	,,	*adek*
nak	,,	*anak*

which are used only in certain phrases.

Bang is used in conjunction with a name as *bang Tam = abang Itam.* "brother Itam," the brother not being a sign of relationship but of respect.

"Which one do you want brother Din? This or that? *Yang mana bang Din mahu? Yang ini-kah, yang tu?*

It is also sometimes used in addressing a stranger as

Bang oe, saya nak tumpang bĕrtanya di-mana rumah si-anu?
"Oh! brother might I ask you where is so and so's house?"

It should not be forgotten that in Malay, titles of relationship are used to express not only actual relationship but the relative rank of the persons addressed or spoken about as compared with the speaker. So that *kak Jah* does not mean "my sister Khadijah" but "Jah who is of the relative rank of *kakak* or elder sister to me." Further, *abang, adek, kak* and *tok* are used as polite forms of address to strangers according to their age and sex to avoid using the pronoun "you" which is considered rude.

There are also a few words which are shortened to the extent of a syllable.

tuala	a towel	*tola*	also	*tuala*
kuala	an estuary	*kola*	,,	*kuala*
biasa	accustomed	*besa*	,,	*biasa*
kuasa	power: authority	*kosa*	,,	*kuasa*

sĕnnyap	"to be or become silent"	*sĕngap*
biawak	"monitor lizard"	*bewak*
sĕntul	"an edible fruit"	*sĕtul*
aniaya	"to do an injustice"	*naya*
buaya	"a crocodile"	*boya*
suara	"a voice"	*sora*
siapa	"who"	*sapa*
tiarap	"face downwards"	*terap*
pĕlihara	"to nurture, bring up"	*plera*
chĕndana	"sandalwood"	*chĕnana*
mĕmbachang	"the horse mango"	*machang*
pĕndar	"phosphorescence"	*pĕnar*
tĕmbelok	"a boring marine worm"	*tĕmelok*
pijat-pijat	"a bug"	*pĕjat*

4. The use of certain peculiar idioms and idiomatic constructions.

One of the most common idiomatic constructions employed in the sense of "in the middle of doing something" is the use of *dok* a contraction of *dudok*, "to sit."

Elsewhere the word *dalam*, "in," *tĕngah*, "in the middle of," or *sĕdang*, "whilst," would be used to emphasise the fact that a person was in the act of doing something; or else the sentence would be introduced by such a word as *masa*, "at the time when"; or the state of action would be understood from the context, or even expressed by *ada* in the sense of "was."

In Penang a sentence such as

"I was in the house at the time," would be, *Kĕtika tu saya dok ada di-rumah* i.e. *Kĕtika tu* "at the time," *saya* "I," *dok ada* "was in the act or state of being," *di-rumah* "in the house."

"I was (in the middle of) eating when he arrived." *Bila dia sampai, saya dok makan nasi.*

"The ship is (in the act of) coming." *Kapai dok mai.*

"As I was (in the act of) going he was coming." *Saya dok pi dia dok mai.*

"A policeman was standing up at the cross roads." *Mata-mata dok tĕrpachak di-kĕpala sempang.*

"I have been ill for a long time." *Saya dok sakit bĕrapa lama*:—
dok sakit "have been in a state of illness."

"He is always playing." *Dia dok main siang malam*:—
dok main "in the midst of play."

Another unusual construction is the use of the prefix *pĕ* to indicate an active sense instead of the more usual suffix *kan*

larikan or *mĕlarikan*, "to run off with," becomes in Penang *pĕlari*.

"He has run off with a man's daughter." *Dia sudah pělari anak orang.*

Pělari also means "to be taken off by" i.e. "to be washed away by."

"The soil was all washed away by the rain." *Tanah itu habis di-pělari hujan.*

The prefix *pě* is used with *baik,* "good," to form *pěbaik,* "to make good i.e. to mend."

Rumah bělum lagi di-pěbaik. "The house is not yet repaired."

The same prefix when attached to *kěchi'* "small," *rěndah* "low," *naik* "to rise," *rapat* "close together," and *hangat* "hot" forms *pěkěchi'* "to make smaller," *pěrěndah* "to make lower," *pěnaik* "to raise or tune up," *pěrapat* "to bring close together" and *pěrhangat* "to heat up."

"Turn down the lamp." *Pěkěchi pělita.*

"The ground should be lowered still further." *Tanah tu mahu di-pěrěndah lagi.*

"He is tuning up the violin." *Dia dok pěnaik biola.*

"He is a little bit on." *Dia sudah pěnaik.*

From *lěkat* "to stick" is formed *pělěkat* "to set fire to fuel."

"Every morning early I have to get up and light the fire." *Sělalu pagi-pagi saya kěna bangkit pělěkat api.*

"The cold rice should be warmed up again." *Nasi sějuk tu mahu pěrhangat.*

"The floor boards should be closer together." *Papan lantai mahu pěrapat lagi.*

Pě when prefixed to a word commencing with the letter *h* becomes *pěr* so that *hambat* "to chase" becomes *pěrhambat* "to chase out" and *habis* "to finish" becomes *pěrhabis* "to finish absolutely," the letter *h* being elided in pronunciation.

"Chased out of the house" *Di-pěrambat kěluar dari rumah*

"Drink up!" *Minum pěrabis!*

5. *Balek* "on the other side of" is used in Penang for *sa-bělah* "on the side of" as

"Two doors on this side" *Balek sini dua pintu.*

"There are two witnesses on this side, but only one on that." *Balek sini ada dua saksi, balek sana choma satu.*

Dan in Penang is the counterpart of *sěmpat* "to have time to," so that *ta' dan* means "no time to."

"I could not get back in time." *Saya ta' dan nak balek.*

"Will we catch the train? Yes." *Dan-kah kěreta api? Dan.*

"No time to eat with so much work." *Kĕrja banyak ta' dan makan nasi.*

"No sooner had I sat down than he come." *Ta' dan dudok dia mai.*

Dan when duplicated on the other hand means, "straightaway there and then."

"A Chinese came to the station and reported that robbers had entered his house. Straight away I went out to enquire into the matter." *Sa-orang China mai repot di-balai kata-nya rumah dia di-masok pĕnyamun dan-dan juga saya kĕluar pi pĕreksa.*

"He returned as soon as he got the telegram." *Bila dia dapat taligĕram dan-dan juga dia pulang.*

La is used for *sĕkarang* "now":—

"Nowadays it exists no longer." *La ni, tada lagi.*
"I want it this very minute." *Saya mahu la ni juga.*

Sat a contraction of *sa'at,* "a moment," is in very general use.

"Come and sit down for a moment." *Hang mai-lah dudok sat.*

"Wait a moment." *Nanti sat.*

"He will be here in a minute." *Sat lagi dia mai.*

"He is always coming (i.e. every minute)." *Sat-sat mai.*

Sat can also be duplicated when it means, "just this very minute, a moment ago."

"He has just this second gone out." *Baru sat-sat dia kĕluar.*

Dĕkat "near" is frequently used for *kapada* "to" and takes the place of *sama* in Singapore.

"How many times have I not told you?" *Bĕrapa kali saya sudah bilang dĕkat hang.*

"Go and ask your master for money." *Hang pi minta duit dĕkat tuan hang*

"He came and abused my wife in filthy terms." *Dia mai maki dĕkat bini saya kotor-kotor.*

"He was fisted and kicked until nearly half dead." *Di-pukoi di-tĕndang dĕkat dia sa-tĕngah nyawa.*

Buang "to throw away" is often used idiomatically with the implied sense of, "to get rid of."

"Tear that up." *Koyak buang.*

"He has left his family and gone to Siam." *Dia sudah tinggai buang anak bini pi nĕgĕri Siam.*

"Who knows where he has gone to live." *Ĕntah ka-mana dia pi dudok buang.*

"Go and have your food first." *Hang pi makan buang dulu.*

"A banishee." *Orang buang nĕgĕri.*

Pakat “agreement by conference,” is sometimes used in combination with other words to mean, “in a body.”—

“The thieves went off in a body.” *Pĕnchuri itu pun sudah pakat lari.*

“Five men assaulted me in a body.” *Lima orang pakat pukoi dĕkat saya.*

“The women cursed him in a body.” *Pĕrĕmpuan sudah pakat maki dĕkat dia.*

The plurative suffix *pa* (in Kedah *apa*) is used in conjunction with the personal pronouns to form the plural number:—

Saya	I	*Sepa*	We	(*Saya pa*)
Hang	You	*Hangpa*	You all	(*Hang pa*)
Dia	He or she	*Depa*	They	(*Dia pa*).

You people are always like this. *Hang pa ni macham tu-lah sĕlalu.*

We will not forget them. *Sepa ta lupa ka-depa.*

Kut “perhaps,” used interrogatively at the end of a sentence but does not do away with *barang kali*:—

“I hope he has not fallen down by any chance.” *Jangan dia pi jatoh kut.*

“Perhaps he is already married.” (answer) “May be.” *Barangkali dia sudah kawin.* (answer) *Kut-lah.*

Jom, “Come on!” is frequently used alone as an interjection:—

“Come along.” (answer) “Come on then.” *Mari-lah.* (answer) *Jom.*

“Aren’t you coming?” (answer) “Alright, let us be off.” *Tuan ta’ mau pi?* (answer) *Jom-lah.*

Lagu “a tune” with the addition of *ni* “this” and *tu* “that” takes the place of *macham ini* and *macham itu* “like this or like that” and has the meaning of “manner” or “way”:—

“Do it in this manner.” *Hang buat lagu ni.*

“He wears a Chinese style of dress.” *Dia pakai lagu China.*

“I don’t like people carrying on in that manner.” *Saya ta’ suka orang buat lagu tu.*

“This is not the right way to carry on.” *Lagu ni ta’ kĕna-lah.*

Noh “will you!” etc. is used interrogatively at the end of a sentence:—

“Don’t forget, will you?” *Jangan hang lupa noh?*

“Youre going aren’t you?” *Hang nak pi noh?*

“You love me, don’t you?” *Hang sayang noh?*

This word should be distinguished from *nah* "here," which is used at the beginning of a sentence when giving things to a person:—

"Here's the money."	*Nah, duit!*
"Here come and take this book."	*Nah, ambek buk.*

Takat "as far as, up to" or *had* (sometimes pronounced *hat*) which has the same meaning and is derived from the Arabic *hadd* "a boundary a limit," are used in conjunction with *ni* and *tu* to express meanings elsewhere obtained by the use of *sampai* or *sa-banyak*:—

"As much as that" (*sa-banyak itu*)	*had tu.*
"He can't do even as much as this."	*had ni pun ta' buleh buat.*
"Water up to the waist."	*ayer takat pinggang.*
"The road ended at that point."	*sa-takat tu jalan pun mati.*

Had is sometimes combined with *hingga* to mean "limit."

"Work without limit (unending)."	*kĕrja dĕngan tiada had hingga.*

*Ha*ⁿ (nasal) "yes," which may be derived from the Hindustani word of the same sound and meaning is much used colloquially in reply to a query:—

"Did you go there? Yes."	*Hang-kah pi situ? Ha*ⁿ.
"Do you want this one? Yes."	*Hang mahu yang ni-kah? Ha*ⁿ.

A word rather similar in sound but omitting the *a* is ⁿ (nasal) which is used as an interjection at intervals by the listener to denote that he is paying attention to what is being said and understands it.

Ĕntah an interrogative, "perhaps; I don't know," is frequently shortened to, *tah*:—

"I don't know where he has gone."	*Tah kamana-kah dia pi.*
"Perhaps he is dead."	*Tah-kah dia mati.*
"What are you doing?"	*Apa-tah hang buat?*

6. The inclusion of words of Indian origin sometimes to the exclusion of native Malay words.

Penang	Singapore	
Aria	*Ulor*	To lower, to pay out rope.
Achi		Respectful designation of an elder sister.
Auta Pa' Kasa	*Auta Sĕleman*	Bluff.
Auta	*Tĕmberang*	„
Bajau	*Gasak*	To strike up or perform on an instrument.
Bel		A tree with an astringent fruit (*Aegle marmelos*).
Bĕriani		A dish of rice and meat cooked together.

Chamcha	*Sĕndok*	A spoon.
Cha	*Teh*	Tea.
Chapras		A badge plate: clasp.
Chandi (shandi)		Stubborn of a horse.
Chota	*Tongkat*	A police baton.
Chokĕra		A Tamil youngster (servant).
Dapra		A fender (on a ship).
Dol		An Indian drum.
Dal		Split peas.
Gadi	*Kĕreta tangan*	A handcart.
Gabra		To be alarmed, agitated.
Hargari	*Pasong*	Handcuff.
Kaman		A police term meaning special duty not regular beat work.
Kachĕra		Low worthless people.
Korma		A rich stew of meat.
Lawak	*Kĕlakar*	Joking; jesting.
Lucha		Obscene, profligate.
Ladam	*Sĕpatu kuda*	Horse shoe.
Mampĕle (mapĕle) —	*Pĕngantin jantan* —	Bridegroom.
Mampĕlam	*Mangga*	A manggo.
Male		A garland.
Mamak		Uncle, a designation for one's father-in-law or the husband of one's aunt.
Mami		Aunt, a designation for one's mother-in-law or the wife of one's uncle.
Mandom		Worthless, a broken down horse.
Machan		The husband of an elder sister (*abang ipar*).
Máini		The wife of an elder brother (*kakak ipar*).
Mambu		The nim tree.
Mitai		A kind of sweetmeat.
Mĕrtabak		A meat omelette.
Nana		Respectful designation of an elder brother.
Pĕtĕras		Pride; arrogance.
Ponen	*Kĕdi*	Impotent.
Pokĕri		A profligate, a blackguard.
Pĕrata		Unleavened bread.
Ponu	*Pĕngantin pĕrĕmpuan*	A bride.
Poni	*Gayong*	A small tin vessel.
Pili		A water tap.
Para	*Jaga*	Sentry go.
Pĕrli	*Buat main: giat*	To tease; to deceive.
Piru		A guinea fowl.
Pariah		A lowcaste person.

Rĕmunggai	*Kelor*	Horse radish.
Ranggi	*Solek: kĕnchang*	Fine, gaudy.
Sauku	*Chabok*	A whip.
Stan	*Hathir*	Reserve duty.
Sule	*Angin*	A rheumatic swelling in the joints.
Shanan		A Hindu coconut tree climber.
Tal (tai)		A tall palm with edible fruit. (*Borassus flabelliformis*)
Tairu	*Ladeh*	Curds.
Tan	*Sĕtal*	A stable.
Tala	*Gĕpoh (kunchi mangga)*	A padlock.

Proper names are now taken almost wholly from the Arabic, native Malay names being reduced to a mere handful of common designations as *Awang,* and *Puteh, Sulong* and *Bongsu.* Penang Malays bear several names which at once denote the Indian extraction of their bearers. Prominent amongst *Jawi Pĕkan* names are such, as *Che Em Bi* (where *Che* is not derived from the Malay honorific *ĕnche'* but forms part of the proper name) ; *Marikan*; *Maidin*; *Pawan, Pa Wan, Pa Wan Chik, Pa Wan Teh;* and amongst women *Ma Wan; Ma Wan Chik; Ma Wan Bi; Bibi*: *Kĕlsom; Kĕlsom Bi; Habibah; Nachar,* etc. Arabic names many of which are long and harsh to Malay ears if pronounced orthographically are all shortened to a monosyllable, which is invariably the last syllable of the words, slightly altered in some cases to soften the sound. This custom is prevalent all over the peninsula with but slight variations in different places for some of the abbreviations. The abbreviated names are the ones in general use when speaking familiarly and in the homes but not even then to the entire exclusion of the fuller forms.

In Penang,

Ismail is abbreviated to or	*Me'* or *Mail*
Jaafar	*Par*
Abu Bakar	*Kar* or *Bakar*
Abdul-Rahman	*Man* or *Draman*
Abdullah	*Lah* or *Dollah*
Darus	*Ros*
Ghaus	*Ros*
Hashim	*Chem*
Hassan	*Chan*
Hussain	*Chen*
Ibrahim	*Em* or *A'em* or *Brahim*
Isa	*Cha*
Junus	*Nos*
Jusoh	*Choh*
Kassim	*Chim*
Arshad	*Chat*
Mahmud	*Mod*

Muhammad	*Mat*
Ahmad	*Mat* or *Amat*
Hamid	*Mid*
Mansur	*Choh*
Osman	*Man* or *S'man*
Sharif	*Yib*
Sa'ad	*Ad*
Sa'id	*Id*
Sa ud	*Od*
Salleh	*Leh*
Isahak	*Ak*
Usop	*Sop*
Khadijah	*Jah*
Fatimah	*Mah*
Asiyah	*Yah*
Saudah	*Dah*
Mariam	*Yam*
Minah	*Nah*
Kalsom	*Som*
Habibah	*Bah*
Nahchar	*Char*
Esah	*Chah*
Bibi	*Bi.*

PENANG.	SINGAPORE.	
Abang	*abang*	elder male cousin.
Abang ipar	*ipar*	brother-in-law; husband of elder sister.
Achar	*limbah*	a cess-pool.
Achi lor	*tutup itu*	hide and seek.
Adek	*adek*	younger male or female cousin.
Adek ipar	*ipar*	brother or sister-in-law, husband or wife of younger sister or brother.
Angkit	*angkat*	to lift, to raise.
Anjak	.. .. ..	slight alteration of position.
Aram	*děndam*	threats of vengeance, to harbour a feeling of vengeance: *děndam* in Penang only means longing.
Asin-asin	*chěkok manis*	a small leaved vegetable, eaten as spinach.
Awal	*siang-siang*	early.
Awas	.. .. ..	a culinary mixture of various prepared vegetables with their appropriate spices etc.
Awat	*kěnapa*	why.
Ayakan **pěngayak**	*ayak*	a sieve: *pěngayak* in Penang is a large sieve for gravel etc.

PENANG.	SINGAPORE.	
Badak tampong	*tĕnok*	a tapir.
Bagan	*pĕngkalan*	a landing stage.
Bagi	*kasi*	to give.
Bairup	*boya*	a fat person (vulgar = from a harbour buoy).
Bakir	*bĕrbĕku basi*	sour milk.
Balai	*rumah pasong*	a police station.
Balun	.. .. ..	to thrash.
Balut	*bungkus*	to wrap up.
Bandarsah	*surau*	a private mosque.
Bangkit	*bangun*	to get up.
Bĕbai	*pĕrĕngus*	cross-grained.
Bĕdĕdam	.. .. ..	to crowd together.
Bĕlachak	.. .. ..	hopping mudfish.
Bĕlah	.. .. ..	to butt; *di-bĕlah kambing,* to be butted by a goat.
Bĕlahak	*sĕdawa*	to belch.
Bĕlalang patong or **patong**	*sibor-sibor*	a dragonfly: *patong chabai,* a red variety: *patong rimau* etc.
Bĕlangkas	.. .. ..	a foursided teetotum for gambling with representations of *bunga udang kĕtam* and *ikan* (Chinese *si bin* four face).
Bĕndang	*sawah*	a stretch of paddy field.
Bĕngkak chantek	*bĕrok antar hasil*	mumps.
Bĕngkang	*bingka puteh*	a sweetmeat.
Bĕngkang gula mĕrah	*bingka merah*	,, ,,
Bĕntara	*pĕlayan*	one who brings in the dishes at a feast.
Bĕrangas (siput)	.. .. ..	tiny sharp shells adhering to wood.
Bĕrchalar	*bĕrgaris*	scratched.
Bĕrkapok	*bĕrpĕlok*	to enfold in the arms.
Bĕrtaki	*bĕrjanji*	to agree.
Bĕrtanya pĕpat	*bĕrtanya tĕpat*	to ask exactly: a direct question.
Bĕrtoh	*langgar*	to collide.
Biji asam (main) kacha kĕrat	*toan* (*Chinese*)	fantan.
Bok	*joran*	a fishing rod.
Bontot kapal	*bĕlakang kapal*	the stern.

PENANG.	SINGAPORE.	
Buah sagalat	*buah mantega*	butter fruit (*Diospyros discolor*).
Buah sawa	*buah sauh*	the chiku.
Buat kambu	.. .. ..	to take in: to swindle.
Buat som	.. .. ..	to look sulky.
Buboh	*taroh*	to place.
Bunga ayer	*bilis*	white bait.
Burong kenek-kenek	.. .. ..	a well known tune with extempore numerous verses introducing *pĕsan datok nenek* i.e. grandpa and grandma's instructions.
Burong sĕgan	..	the night-jar, on account of its lazy habit of laying its eggs on a road without a nest.
Chabai	*lada*	chilis, *lada hidup* = fresh; *lada kĕring* = dried.
Chak	*pipit*	a sparrow.
Chak Bĕngala	*jĕlatek*	the Java sparrow, a bird of the finch tribe.
Chak burong	*pipit rumah*	the house sparrow.
Chak pipet or chak tuli	*pipit tuli*	a small speckled finch, which is fond of padi and takes a lot of scaring.
Chak raya	*burong tĕmpua*	the weaver bird.
Chak tanah	.. .. ..	the ground lark.
Chak uban	*pipit uban*	the white-headed munia.
Chakok	*changkok*	a crook, a hook.
Chalak	.. .. ..	affection.
Chamdek	*sindir*	innuendo, sarcasm: to get at a reason indirectly.
Chamor	*sepah*	scattered about.
Champin	.. .. ..	a slight flow.
Changkat	*tohor, chetek*	
Changkis	*chantis*	shallow.
Chapek	*tempang*	a scrawl (of handwriting).
Chapul	.. .. ..	lame.
Chapui (= chabul)		indiscreet chatter and remarks on strange subjects in times or places of danger, regarded as liable to bring down some misfortune: a loose tongue, *mulut chapui*.
Chas	*getek, kĕletah*	forward of a girl; fast.
Chĕdas	.. .. ..	lively, strong, recovered as from an illness.
Chĕkam	*chĕngkam*	to compress as a flat object between finger and thumb.

PENANG.	SINGAPORE.	
Chĕkang	*tĕgang*	taut.
Chĕkap	.. .. ..	able, skilful, competent
Chĕlĕpa	*kĕpok*	a small tin receptacle for tobacco or cigarettes.
Chĕlaru	.. .. ..	in confusion, in disorder, scattered around.
Chĕlus	*lulus, muat*	ability to pass through an aperture, *lulus* in Penang only means to succeed, to come off.
Chĕmpa	*chĕmpaka*	the champak tree (*Michelia champaca*).
Chĕmpaka	*bunga kubor* *bunga kĕmoja*	the franjipanni.
Chĕmpĕdak mambong	*nangka bubor*	a large pithy jack fruit, with little or no contents, a fat woman.
Chĕmpĕra	*tĕmpiar*	broken up, scattered in all directions as frightened chickens.
Chĕmus	*jĕlak*	nausea, from overeating.
Chĕnchodak	*todak*	a sea fish with long projecting jaws.
Chĕndĕrus	.. .. ..	the refining of rancid oil.
Chengkok	.. .. ..	bent, *chengkok bĕledok,* bent and twisted, twisting and turning.
Chengkol	.. .. ..	twisted, bent up of a diseased arm or shrivelled hand.
Chĕnohom (daun)	*kĕsom*	a small shrub with fragrant edible leaf.
Chĕnonot	*tulang tongkeng*	the extremity of the backbone, *chĕnonot ayam,* the pope's nose.
Chĕnuram	*churam*	sloping.
Chĕrah	*tĕrang*	clear, in Penang *kulit chĕrah* is a fair skin i.e. not dark, *mata-mata chĕrah* is an ordinary P. C. as opposed to a *mata-mata gĕlap,* or detective.
Chĕtĕra	*chĕrita*	a tale, a story.
Chop	.. .. ..	a spade.
Chor badar	*chuchor badar*	a cake of flour, currystuffs and prawns (*wada Tamil*).
Chor kodak	*jĕmput-jĕmput*	small round balls of banana and flour.
Chor pisang	*goreng pisang*	a banana fritter.
Chuak	.. .. ..	nervous, frightened, afraid (*hati chuak* from the Chinese *choah*)
Chuchor	*pĕnganan*	cakes.

PENANG.	SINGAPORE.	
Dakap	*pĕlok*	to embrace.
Darai	*mandul*	sexual impotence of the female.
Daun pĕjat	*haroda*	rue.
Dogeng	*dogel*	unfledged, featherless, as some young chickens with a few strong feathers on back and wings, clothes etc.
Domol	*monchong*	snout.
Duit	*sen*	one cent.
Duku	*sekeh*	to rap with the knuckles.
Egeh	*egah*	to walk with an unsteady gait as an old woman, *jalan tĕregah-egah.*
Ekor kuda (rumput)	.. ..	.. a grass with a tufted head like horse tails.
Elok	*molek*	pretty.
Enau	*kabong*	the suger plant.
Galah panjang or **tui**	*main galah*	a game like prisoner's base.
Gamak	*agak*	to guess.
Garok	*garau*	rough voiced, raucous, rasping.
Gasal	*ganjil*	odd of numbers.
Gebang (bĕrgebang)	*bĕrbual*	to yearn.
Gĕbu	.. ..	.. soft, white as sand or a woman's hand.
Gĕdĕgar	.. ..	.. very coarse, of a fabric.
Gĕdubil	*sĕlamba*	unmoved, brazen.
Gĕlak	*kĕtawa*	to laugh.
Gĕlam	.. ..	.. a light brown heron the size of a *bangau,* found in padi fields and swamps.
Gĕlebat	*bĕlebat*	a double bladed paddle.
Gĕloh leher	.. ..	.. to slit a person's throat.
Gĕmpar	.. ..	.. to threaten, to scare (in Singapore *gĕmpar* only means to bruit abroad).
Gĕndang raya	*bĕdok*	the big drum in a mosque for beating the hours of prayer.
Genjak	.. ..	.. slight alteration of position, to move.
Genjut	.. ..	.. to edge towards (*genjut* in Singapore is out of the straight as the fold of a sarong etc).
Gĕrai	.. ..	.. a platform on which newly confined women lie to be warmed (*salai*).

PENANG.	SINGAPORE.	
Gĕrĕmit	*gĕrodi*	an auger.
Geti	*turi* (*sayor turi*)	the edible leaf of a small tree.
Ginchar	*kinchar*	to cleanse, to wash clothes etc. by swishing about.
Godam	.. .. ..	to hammer, to chastize.
Golok	*parang*	a Malay chopper.
Gonjak	*giat*	to tease, to annoy, to pull a person's leg.
Goris api	*korek api*	matches.
Gosok	*gosok*	to rub, to scrub.
Gula gerek	*gula Malaka*	brown coconut sugar.
Gula puteh	*gula pasir*	white fine sugar.
Gun	.. .. ..	rising ground.
Gundi	*guni*	a sack.
Guri	.. .. ..	an earthenware pot.
Gut-gut or gugut	*bubut* (*burong*)	a bird, a variety of Coucal, a ground cuckoo.
Habuan	*untok, bagian*	a share.
Hailan	*hal-nya*	plight; position; circumstances; affairs.
Hambat	*kĕjar*	to chase.
Hangat	*panas*	hot.
Hindu	*Kĕling Hindu*	a Tamil; a Hindu.
Hingar	*bising*	noisy.
Ipar lamai	*ipar duai*	brother and sister-in-law of various degrees.
Jajat	*ejok*	to mock, to tease.
Jalang	*sundal*	a prostitute.
Jalor	.. .. ..	striped.
Jambang	*chambang*	whiskers.
Jamong	*andang*	a torch of palm leaves.
Janggus	*gajus*	the cashew nut.
Jangkit	*kait*	to bait a hook by piercing.
Jĕlabas	*chĕlupar*	talkative, garrulous, especially of a person who passes remarks on everything he notices.
Jĕlaga	*sulang asap*	lamp-black.
Jĕlapang	.. .. ..	a raised granary.
Jĕnĕhak	*ikan merah*	a fine red sea fish.
Jĕrap	*sĕrap*	to soak, filteration, in Penang *sĕrap* means to sponge on.
Jĕrumal	*kelong*	a deepwater fishing stake.

PENANG.	SINGAPORE.	
Jĕrumun	.. .. ..	a mound of grass: a wild pig's lair: a hut of grass used as a cover by hunters in decoying gamebirds, in this last context, *bumbun* is the word employed in Singapore, whereas *bumbun* in Penang means heaped up, as a very full measure of grain called in Singapore *pĕnoh mĕrombong*.
Joreng	*choreng*	striped (in Singapore *joreng* is a small strip of fish etc).
Jurai	*joreng*	a strip of fish, etc., *sa-jurai ikan.*
Jurus	*airus*	to water.
Kachang kĕlisa	*kachang botor*	the flanged bean (edible).
Kain rawa	*kain pĕlangi*	a cloth usually silk blotched with all the colours of the rainbow, worn by women.
Kakak ipar	*ipar*	sister-in-law, wife of elder brother.
Kaleh	*aleh*	change of posture.
Kalut	*mĕmbolot*	busy, bustling about.
Kambi	.. .. ..	a plain metal earring.
Kambus	*timbus*	to fill in.
Katak	*kodok*	a frog.
Katok	*kĕtok*	to rap, to knock, to hit.
Katup	*tutup*	to close.
Kawat (kawaid)	*bĕrbaris*	drill.
Kĕdĕra	*anak bĕlanak*	a seafish like a small *bĕlanak*.
Kĕdiri	*sindiri*	oneself.
Kĕdudok	*sĕnudok*	a common pink flowered shrub like a wild rhododendron.
Kĕlabong	*bĕrsepah*	mixed up, higgledy piggledy.
Kelang	*enjin*	a mill.
Kĕlarah	.. .. ..	a maggot which bores the branches of the mango trees in particular.
Kĕleh	*lihat, nampak*	to notice.
Kĕlian	*galian*	a mine.
Kĕling	*Kĕling Islam*	a Mohamedan Tamil.
Kĕlip-kĕlip	*kunang-kunang*	a firefly.
Kĕlmarin	*sa-malam*	Yesterday (in Singapore *kĕlmarin* can be used indefinitely for any previous date or occasion.
Kĕlochak	*gĕlanchah*	choppy, broken of water.

Penang.	Singapore.	
Kĕlola	*jaga*	to manage, to look after, *ta'kelola.*
Kĕloloh	.. .. ..	casual.
Kĕlumbong	(*kain*) *tudong kĕpala*	a sarong worn as a mantle by Malay women.
Kĕmaman	.. .. ..	a small shrub with short pods which are made into a pickle (*jĕrok*).
Kĕman	*si-malu*	the sensitive plant.
Kĕmatu	.. .. ..	a corn, a callosity.
Kĕmĕling tĕlor	.. .. ..	the blue water hyacinth.
Kĕmukus	*tĕmbĕlang*	addled, of an egg.
Kĕmurok	*tĕlor busok*	a rotten egg.
Kĕndi	.. .. ..	a small grey curlew found on tidal flats.
Kĕnduri kĕndara	.. .. ..	an intensitive of *kĕnduri,* feasts of all sorts.
Kĕpak	.. .. ..	to break off by bending.
Kĕpala bĕsar (burong)	.. .. ..	a plover.
Kĕpul	.. .. ..	one fourth of a chupak.
Kĕrabat	.. .. ..	to swarm up, to climb up.
Kĕra duka	*kongkang*	the slow loris.
Kĕrak nasi	*si-kudangan*	the small white scented flower of a climber much used by the Chinese ladies in their hair.
Kĕrap	*sĕlalu*	frequently: *kain kĕrap* = close woven cloth.
Kĕredak	*kĕlodak*	dregs, refuse left at the bottom or on the sides of a vessel.
Kĕrĕlap tĕrkĕrĕlap	.. .. ..	to snooze.
Kĕrĕnah	.. .. ..	secrets, scandal, gossip, private affairs.
Kĕrĕsau	*kĕreteng*	frizzy of hair.
Kĕrĕsul	*kĕrĕsai*	dry and wiry of hair.
Kĕriang Acheh	*kayu kĕlat*	a large tree with reddish-black edible berries the size of damsons.
Kĕriang lada	*kayu kĕlat*	another variety with edible berries (tiny).
Kĕriau	*pĕkek*	to call out aloud.
Kĕrja tĕr-togah-togah	*kĕrja tĕragah-agah*	work that is being continually left off.
Kĕrosi sandar	*kĕrosi malas*	an easy chair.
Kĕrtas pedap	*kĕrtas kĕmbang*	blotting paper.
Kĕrunas	.. .. ..	to pick to pieces, to exhaust by taking bits at a time.

Penang.	Singapore.	
Kĕrutop	*pakat pukol*	to assault in a gang.
Kĕsangka	.. .. ..	a large earthenware cooking-pot.
Kĕsĕmak	*buah samak**	a persimmon.
Kĕtayap	*songkok haji*	a white skull cap.
Kĕtĕki	*tĕka-tĕki*	a riddle.
Kĕtul	.. .. ..	a lump, a clot, a piece.
Kĕtumbit	*tembel**	a stye in the eye.
Kira	*hitong*	to count.
Kong	*gading-gading**	the ribs of a boat (in Singapore *kong* is a particular shaped rib.)
Kongkiak	*chĕngkiak**	a bulldog-ant with large black head and mandibles which bites fiercely.
Kopiah	*songkok*	a Malay cap.
Kosta (sakit)	†*taiko* (*Chinese*)	leprosy.
Kotek mamak	.. .. ..	a tree with long pods used medicinally, the pink acasia (*Acasia horrida*).
Kuchai	.. .. ..	to disturb.
Kudil (e)	*kudis*	scurf.
Kuja	.. .. ..	an earthen jug.
Kulat	*chĕndawan*	a mushroom.
Kutip	*pungut*	to collect, to pick up.
Lada	*lada hitam*	pepper.
Lahar	.. .. ..	a mere.
Laki ayer	.. .. ..	a daddy-long-legs found on the surface of pools of water.
Lambong Kĕling	.. .. ..	a form of the game *sĕrĕmban* played with one hand.
Langgas	.. .. ..	free, unrestrained, without ties or impediments.
Lan	*tĕrmĕngkĕlan hati*	a feeling of repulsion, as when eating dirty food, revolting.
Langcha	*becha* (*Chinese*)	a ricksha.
Langut	*dangok*	to look up longingly.
Lapek	*alas*	a lining, pedestal, etc.
Larap	*tĕrok*	serious, painful of illness.
Lau	*rĕban*	a fowl house.
Lĕchas	.. .. ..	sweet (*manis mĕlĕchas* extremely sweet).
Lĕkang	*longkah*	to peel off, easily shelled, of fruit.
Lĕkeh	.. .. ..	dirty, despicable, wretched as a loafer.
Lĕmang		any sausage like body sometimes used coarsely of the penis.

PENANG.	SINGAPORE.	
Lĕmba	.. .. ..	low of stature, *ayam lĕmba* a short low-bodied fowl.
Lena	*lĕlap, lĕnnyak*	fast asleep.
Lenchong (mĕlenchong) †		to go off at a tangent.
Lĕndit	*tertib*	neat as a phrase.
Lĕnga	*bijan*	a small seed (*Sesamun indicum*) from which an oil is expressed, much used by Tamils for anointing their persons.
Lewat	*lambat*	late.
Likat	*pĕkat*	thick of liquids.
Linchin	*lichin*	smooth.
Lingkup (pi-lah)	*pe setan*	to blazes with it, let it go to pot, from *lingkup* = spent, destroyed.
Lodoh	*bonyor*	ripe to rottenness, pulpy.
Longkang	.. .. ..	the breadth of a sarong round the waist *longkang-nya bĕsar* full in the waist.
Loklek	*tĕrkedek-kedek*	an affected mincing walk.
Machang	*mĕmbachang*	horse mango.
Machang (sakit)	*mangga* (*sakit*)	a bubo.
Madah (from **padah)**	*jĕmput*	to invite, as to dinner.
Main saji	.. .. ..	the playing of Hindustani airs with a harmonium and dol.
Mala	*layu*	faded.
Malam sat ni or **malam ni**	*malam sĕkarang* or *malam ini* or *malam karang*	tonight.
Mampai	.. .. ..	blunt, not cut to a point or edge, the end of a pole or back of a parang.
Manisan lĕbah	*ayer madu*	honey, *ayer madu* in Penang only means the sweet juice of fruits.
Mata ikan	.. .. ..	a corn.
Mawa	*ungka*	a wahwah monkey.
Mĕlayah	*mĕlĕmang* (*mĕnjilat duit*)	to bend over backwards and pick up article with one's mouth (a *joget*'s trick).
Mĕlachar	*bĕrgarut*	to be abrased, an abrasion.
Mĕlong	.. .. ..	over-developed, as a child.
Mĕmbuang sĕrĕkap jarang	*mĕnebar jala rambang**	to throw a wide net, to cast around for information.

PENANG.	SINGAPORE.	
Mĕnahagu	.. .. ..	to importune, to be always borrowing articles.
Mĕnari	*bĕrtandak*	to dance.
Mĕngebat	*lawa*	to show off.
Mĕngĕroh	*dĕngkoh*	to snore.
Mĕnguet	.. .. ..	to move, *ta' mĕnguet* not a kick left in him, motionless.
Mĕnyĕbai	.. .. ..	to be in a pet, huffy.
Mĕrapus	.. .. ..	to tie the four legs of an animal together for killing etc.
Mĕratap	.. .. ..	to have one's fingers loaded with rings, *jari-nya mĕratap dĕngan chinchin.*
Mĕrĕloh	*mĕmbuta*	to be fast asleep, (in Singapore *mĕrĕloh* is only used in its proper sense of to be blind.)
Mĕrepet	*mĕrepet* or *mĕrepek*	to drivel, to talk nonsense.
Mĕrjan	.. .. ..	large beads of gold etc. fretted or otherwise worn round the neck, the smaller beads being termed *manek koral* or *manek Arab.* In Singapore *manek mĕrjan* means a coral bead.
Minyak gas	*minyak tanah*	kerosene oil; *minyak tanah* in Penang is the thick reddish oil used for putting on woodwork, boats etc., i.e. crude oil.
Mok-mit	*komek kamek*	mouthing, the movements of the mouth in speaking.
Monel	.. .. ..	pretty and white of a child.
Montel	.. .. ..	well nourished, of a child.
Mopeng	*bopeng*	pock-marked.
Muka pĕran	*topeng*	a wooden mask used in a *mayong.*
Muka tĕbal	*muka papan*	unashamed, brazen.
Murai gila	*murai gila*	the fantailed flycatcher.
Nirai	*baris*	a line.
Nyior †	*kĕlapa*	a coconut.
Ochok	*chochok*	to incite.
Ochok-ochok	*pĕngochok* (*chĕrochok*)	a forked stick with bits of coconut shell attached loosely for frightening fish.
Otak tulang	*som: lĕmak tulang*	marrow.
Pachak	*chachak*	to stick into.

PENANG.	SINGAPORE.	
Pajak ikan	*pasar*	a market.
Pajak lĕlap	*pajak gantong*	shops where unredeemed pawn pledges are sold.
Paket (Eng.)	*saku, kochek*	a pocket.
Palong	*jongkong*	a smaller dugout.
Panching †	*mĕngail*	to fish with a line.
Panchor	*paip ayer*	a tap, a pipe.
Pandak	*pendek*	short: in short.
Panggil	*tĕriak*	to call, (in Penang *tĕriak* only means to weep.)
Panggu	*bahagian*	a share.
Pangkeng	*pĕntas*	a sleeping bench.
Parau	*sĕrak*	hoarse, to lose one's voice.
Parit †	*longkang**	a drain, a gutter (*parit* in Singapore means an earth drain.)
Pa'saut	.. .. ..	father of scoops, i.e., a snatcher of goods, or a good man at picking up women.
Pasĕmbor	*rojak parut*	a mixed vegetable salad with a pungent sauce.
Pebin	.. .. ..	an eight-sided teetotum for gambling at the Chinese game of *Penbin,* eight-faced.
Pĕchah ĕmpat (bunga)	*kĕmbang pukul ĕmpat*	a common white flower with seeds like a pepper-corn containing a fine white powder.
Pĕdukang	*bĕlukang**	a mudfish, a man who always has an eye on the main-chance as regards women.
Pĕgaga	*pĕraga**	a creeping herb with an edible leaf.
Pĕjam	*kĕjam**	to close one's eyes.
Pĕkaka	*raja udang**	a kingfisher.
Pĕkin	.. .. ..	to think about saving, to economise, careful of expenditure.
Pĕlau	*andar*	in vain: unsuccessful effort, *buat kĕrja pĕlau,* to have toiled and got no reward.
Pĕlantek	*bĕlantek**	a spring gun.
Pĕlatok	*bĕlatok*	a woodpecker.
Pĕlatut	.. .. ..	an idler.
Pĕleta	*lampu*	a lamp.
Pelet	*pelat*	accent, brogue.
Pĕnakan, abang	*saudara abang*	elder male cousin.

PENANG.	SINGAPORE.	
Pěnakan, adek	*saudara adek*	younger male or female cousin.
Pěnakan, anak	*saudara anak*	nephew or niece.
Pěnakan, bapa	*saudara bapa*	uncle.
Pěnakan, kakak	*saudara kakak pupu*	elder female cousin.
Pěnakan, mak	*saudara mak*	aunt.
Pěnoh běkat	.. .. ..	chock full.
Pělontang	*Pělampong*	floats (*pělontang* in Singapore is the single big float which marks the end of the net).
Pěnyangak	.. .. ..	a thief, a filcher.
Pěpait (siput)	.. .. ..	a small shell found in paddy fields.
Pěrachut	.. .. ..	a big boil.
Pěrahu	*kolek*	a Malay canoe.
Pěrak	*changak*	startled, as an animal; to cast startled glances.
Pěrat	*těngek*	rancid.
Pěrdu	*pangkal*	a base of a tree trunk.
Pěreh ikan (orang)	*pěraih ikan*	a middleman who buys fish from the fisherman.
Pěrenggan	*sěmpadan*	a boundary.
Pěrengkat	*tengkat, pangkat*	graduation in rank or degree of relationship standard; level.
Pěriap	.. .. ..	to stupefy.
Pěrmatang	.. .. ..	an island of rising ground in a plain.
Pějal	*kěnnyat*	hard and firm of flesh, *batu pějal* = *batu ubin* (Singapore).
Pětola	*kětola*	a variety of edible pumkin.
Pinang kachat	*jěrekat**	unripe betel nut used for wiping the teeth.
Pinang rampang	.. .. ..	betel nut edible, but not quite mature, being still slightly juicy.
Pompang	.. .. ..	a drift net.
Puak	*pasok*	a troupe.
Pudina (daun)	.. .. ..	mint.
Pulut tětal	*pulut apit*	a sweetmeat of compressed *pulut*.

PENANG.	SINGAPORE.	
Punggai	.. .. ..	to throw down; to haul.
Pungkor	*punggong, bontot*	the buttocks.
Radup	*jahit sembat*	a plain hemstitch.
Ragi	*chorak*	pattern.
Rajut	.. .. ..	covering anything with successive folds of string, as a basket to be sent on a long journey *Rajut* in Singapore is to knit this being expressed by *kait* in Penang.
Ralip	.. .. ..	habitual practice; custom; *ralip dĕngan bĕrmain* given up to play.
Rama-rama	*kupu-kupu*	a butterfly (in Singapore *rama-rama* is a moth).
Rambutan kapri	*pulasan*	a good variety of rambutan fruit with short hairs and deep red skin.
Rawa	*sondong*	a shrimping net.
Rĕbah	*roboh*	to fall down; of a house.
Rĕlah	.. .. ..	torn, of a coat.
Rĕmbia	*gombia*	the sago palm.
Rĕmpong	.. .. ..	a bunch, to make into a bunch.
Rĕmia	*rĕmĕnia*	a small round yellow acid fruit with a mouse-coloured stone (*Bouea macrophylla*) *warna biji rĕminia* mouse-coloured.
Rĕmudu	*bĕbudu*	a tadpole.
Rĕndang	*goreng*	to fry.
Rengkat	.. .. ..	to limp, to walk unevenly as a man with a bad foot.
Rĕsdong	*rĕstong*	syphilitic ulceration of the nose.
Rimbok	.. .. ..	a blow with the side of the fist.
Rian	*royan*	a protracted flow of blood after confinement.
Rona	*warna*	colour.
Ronggeng †	*joget**	a Malay dancing girl.
Rongkeng	*kĕrongkong*	throat.
Roti surai or **roti karai**	*roti jala or roti jurai**	shredded wheatmeal bread for eating with curried meats.
Ruseng	.. .. ..	peevish, grumpy.
Rusok	*sa-bĕlah; tĕpi*	at the side of (a house, etc.)
Sa-barong	.. .. ..	to mix with, to associate with, *dia suka sa-barong dĕngan Siam* he likes associating with Siamese.

PENANG.	SINGAPORE.	
Sabit	*sĕbab*	on account of, reason, cause.
Sagi	*sĕgi*	a side, a facet.
Sakal	.. .. ..	to rap with the knuckles, to strike.
Sakan	*sasa*	big and sturdy.
Sa-kupang	*sa-puloh sen*	ten cents.
Sa-lulus	.. .. ..	always, often.
Sandĕrom	.. .. ..	a necklace worn by married women of Kling descent, with a pendant called *puti mani.*
Sang Gĕdĕmbai	*Sang Kĕlĕmbai*	a mythical magician.
Sa-piak sireh	*sa-kapor sireh*	a mouthful of sireh.
Sa-tĕngah duit	*dua duit* or *duit dua duit*	a half cent piece.
Sardu	.. .. ..	a gold neck ornament worn by Hindu women.
Sasau	*sasar*	lightheaded.
Satu shambu-kain (sambu)	.. .. ..	a double sarong as yet uncut.
Satu suku	.. .. ..	25 cents; *lima suku* is $1.25.
Segak	*pĕsolek hebat*	dandified, fine-looking.
Sĕgan (pĕnyĕgan)		reluctant (in Singapore *sĕgan* only bears the meaning of *malu,* shy). a sluggard.
Segok	*janggal*	awkward, out of place, not in keeping with the surroundings.
Sĕlang	*lat*	intervening.
Sĕlaseh (buah)	*buah bĕlewar*	passion fruit.
Sĕling	*siling*	small silver change.
Sĕlut	*lumpur*	mud.
Sembang	.. .. ..	to sit round and chat.
Sĕmbawa	*buang pĕlawa*	to invite in.
Sĕmbilang karang	*usat*	a small striped *sembilang* fish.
Sĕnayan	*Isnen, Sĕnen*	monday.
Sĕngkak	.. .. ..	nausea; the feeling of having eaten too much. In Singapore *sĕngkak* means to massage the stomach upwards by gripping it tightly between thumb and forefinger.

PENANG.	SINGAPORE.	
Sĕrĕlum	.. .. ..	to slip on over the head as clothes or a sarong.
Sĕriak	*rĕda*	to abate, of rain.
Sĕriau	*nilu, nyilu*	on edge, of teeth.
Sĕronok	*suka ria*	gay, merry, interesting.
Sĕtar	*kundangan*	a large tree with a small round acid fruit, edible.
Sigolak	*kolak-kolak*	a gambling game with dice and squares numbered 1 to 6.
Sila †	*jĕmput*	to invite, please; in Penang *jĕmput* only means to pinch.
Shelum (daun selom)	.. .. ..	an edible leaf, often put into salads (*kĕrabu*).
Siap	*sĕdia*	ready.
Simpan	.. .. ..	to tidy up, to bury.
Siput bĕrantai	.. .. ..	a small bivalve found in clusters in salt-water and used as duck feed.
Sukat tanah	*ukor tanah*	to take measurements of land.
Suku duit	*sa-duit*	a quarter cent.
Suku-suku depa	.. .. ..	their crowd, amongst themselves.
Tabut	*rudu*	a Kling idol.
Tajin (tĕpong)	*kanji*	starch.
Takat	*senggat*	up to, as far as.
Tajok dayong	*tol**	thole pin.
Ta larat	*tada daya*	unable to do a thing from physical weakness.
Tali	*pintar*	wily, a clever rogue, a deceitful rascal.
Tali kĕrangan or tali kanjang		a specious person with a good address.
Tambun	*timbun*	to heap up.
Tĕbeng	.. .. ..	to persist in any course in spite of warnings, *tĕbeng main lagi* = to persist in playing after having been told not to.
Tĕku	*tĕkun*	assiduous, *bĕrtĕku-tĕkat* = most assiduous.
Tĕmbun	*tĕmbun*	plump.
Tembu	*bĕri hati*	to encourage, to buck up, to assist.
Tĕmuchut	*chĕrunchup*	love grass.
Tĕmukut	*mĕlukut*	broken rice, rice dust.

PENANG.	SINGAPORE.	
Tenyeh	*genyeh*	to rub with finger as in erasing writing.
Tĕnggak	.. .. ..	to essay; bearing; sure; *tĕnggak anak raja* = the fine bearing of a prince, *choba tĕrtĕnggak-tĕnggak lagu itu* try and essay that tune.
Tĕngglong	*pĕnanggal*	an evil spirit consisting of a head and dependent viscera.
Tĕrgĕliat	*tĕrkehel*	to sprain, out of joint.
Tibai	.. .. ..	to wallop, to thrash with a stick.
Timun betek	.. .. ..	a much relished variety of squash melon.
Tinas	*tindas*	to crack a flea.
To'chan	*china buta**	blind man's buff.
Tuas	.. .. ..	bamboos moored in deep water with brush wood attached to collect fish.
Tungap	.. .. ..	to die.
Ubi ikan	*bĕbulus*	a fish, like whiting.
Ular danu	*pĕlangi*	the rainbow.
Wau	*layang-layang*	a paper kite; *layang* only means a swallow in Penang.
Wayang gĕlap	*wayang gambar*	a cinematograph performance.
Yat	.. .. ..	a burrowing crustacean not unlike a beetle found in the sand at the water's edge; edible.
Yue	.. .. ..	matted marsh grass over water which will bear a person's weight if stepped over quickly, *bĕryue-yue* = to give as the above when walked on.

NOTE:—Words under the heading Penang marked † are either understood in Singapore but not used, or at least not in such general use as the similar word given under Singapore.—Words marked with an asterisk under the heading Singapore are not understood in Penang.

A Vocabulary of Pangan.

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This list of words used by the Pangan of the Ulu Nenggiri below Kuala Betis in Kelantan was begun by me when I spent a day with the three chief Pangan and some forty of their followers in 1914. Circumstances prevented my remaining any time among them but I was able to induce one young man with some knowledge of Malay to come down to Kuala Krai in 1916 and during the three weeks in which he lived near my house I collected this vocabulary. I had hoped to check the words through a further visit to the Ulu but ill health prevented it and now it seems to me better to publish it in spite of errors so that some one else, who may have an opportunity of getting to know these people, may use this vocabulary as a foundation for a more thorough one. These words are used by the river Pangan who trade with Malays in jungle produce and whose clearings are on the foothills near the river. Inevitably a certain number of Malay words are in use and I was informed that the Pangan of the higher ranges employed words not in ordinary use among those on the river.

I would thank Dr. Winstedt for preparing my rough manuscripts for publication and for making references to the words collected.

Batu Gajah,
October 18th, 1920.

Pangan Vocabulary

from

Sungai Nenggiri, Kelantan

NOTE. References are given to the Vocabulary in Vol. II of Skeat and Blagden's "Pagan Races of the Malay Peninsula."

A.

ABOVE (*atas*) m'bali.
,, (*di-atas*) ta'el m'bali.
,, (*dari atas*) m'bali te'erik.
ABSCESS sél *Sak.*, A. 14.
ABUSE ĕmarah, ngaroh.
ACCUSE adu *Mal.*
ACCUSTOMED biasa *Mal.*
ACID bĕchuid.
ACKNOWLEDGE aku *Mal.*
ACRID (*kĕlat*) tĕrók kĕlad.
ACROSS (*sa-bĕrang*) mĕlanti tiu.
ACT tinda'el, ? D. 132.
ADAM'S-APPLE kalar.
ADDLED kĕmlang.
ADZE (*bĕliong*) jek *Khmer*, A. 33.
,, (*puting*) puting *Mal*
AFRAID éttu *Sak.*, F. 48.
AFTER monyut.
AGAIN péti lagi.
AGE roak.
AGILA WOOD gaharu *Sk.*, *Mal.*
AIGRETTE échadog.
ALIVE tigōs *Sem.*, *Sak.*, A. 57.
ALL ti sĕkali *Sak.*, A. 63.
ALONE déri egagul, A. 70.
ANKLE deldu, F. 220.
ANOTHER sĕnoi-i suku *Sak.*, M. 26.
,, TIME nainong nainong.
ANT (*sĕmut*) kabed, ? *Sak.*, A. 107.
,, (*kĕrĕngga*) kāsod *Sem.*, A. 101.
,, (*anai-anai*) garush, A. 110.
,, (*pĕnyĕngat*) semud.
,, BIG, kabed tampul.
,, BLACK kajé.
,, RED kĕtéd.
,, SMALL sémūr.

ANT-EATER wajoud.
APART langu war.
APE (*lotong*) tabuk.
,, (*kĕkah*) bĕrkis *Sak.,* M. 137.
,, (*kĕra*) jela-ow *Sak.,* M. 142.
,, (*bĕrok*) bawaidj *Sem.,* M. 134.
,, (*siamang*) amang *Mal.,* M. 159.
,, (*mawah*) hawan.
ARECA blök, A. 125.
ARGUS-PHEASANT kwok *Sem.,* B. 215.
ARM sapal, A. 135.
ARMADILLO wajuoj.
ARMLET kenélah *Pang.,* R. 133.
ARMPIT senok.
ARRIVE (*sampai*) élöi, ĕnglöi *Pang.,* A. 145.
ASCEND éöïj *Sem.,* A. 154 (b.)
ASHES habu *Mal.*
ASK, TO sĕmoin *Mon,* A. 165.
,, FOR, TO éudj.
ASLANT na rondong ? *Mal.*
ASLEEP slug *Sak.,* S. 249.
ASSEMBLE termah.
ASTONISHED (*tĕrkĕjut*) ékĕjud *Mal.*
,, (*hairan*) yinim.
ASTRAY rajarudj.
AT (*di*) tan'él.
ATAP (THATCH) kĕndrob. *Sak.,* R. 167 and 169.
ATTACK tumput.
AUNT mo'ar, muar.
AWAIT épod *Sak.,* W. 5 and 6.
AWAKE épog *Sem.,* A. 190.
AXE kapak *Mal.*

B.

BACK kĕrit, B. 4.
BAD chĕlaka *Sk., Mal.,* jahad *Mal.*
BAIT prat.
,, , TO TAKE nacha prat, E. 27.
BALD natā.
BAMBOO awat *Sak.,* B. 29.
,, (*akar*) kiul, ? B. 22.
,, (*kisap*) tĕming, B. 28.
,, (?) tahel.
BANANA tĕluwi *Sem.,* B. 42.
,, jâ-i *Sem., Bahnar,* B. 48.
,, mamóh.
BANK (*of river*) tĕbing *Mal.*
,, (*tĕpi*) mabék

BARB cheh.
BARK (*of tree*) katok.
BARK, TO (*of dog*) najöl *Sem.,* B. 59.
BASKET (*raga*) rajud *Mal.*
,, (*galas*) safud.
BAT (? FRUIT-) lasar, B. 79.
,, (red) gayék.
,, (*kĕlawar*) lawar *Mal.*
BATHE moh *Sem., Sak.,* B. 81.
BAY (*tĕlok*) gōl.
BE mô *Sem., Sak.,* B. 88.
BEAD nemad, E. 83.
BEAK balok.
,, (*of hornbill*) kachak.
BEAR (*bĕruang*) kawi *Sem.,* B. 103.
,, , TO (*a child*) bagerid, C. 106.
BEARD sĕntal jĕkah, H. 2 and C. 113 (a).
BEAT épeluk, S. 496.
,, (*do'nt beat*) jé a épeluk.
,, (*bark*) éköh.
BEAUTIFUL mej., G. 66.
,, WOMAN babô, G. 63.
BECKON (*to come*) nagajuaj, T. 85, G. 43.
,, (*to point*) telék.
,, (*to wave*) épiul.
BEE (*kĕlulut*) tĕbúl *Sen.,* B. 136.
,, (*lĕbah*) luï *Sem.,* B. 137.
,, (*lĕbah lalat*) langir.
BEFORE (*dahulu*) ningneng, T. 51 (e).
,, (*in front*) dada *Mal.,* B. 380 (e).
BEGIN sarô.
BEGINNING (*pangkal*) tĕrô *Sak.,* T. 210.
BEHIND namyut (nyut?)
BELIEVE pochaya *Sk., Mal.*
BELOW kĕrop *Sen.,* B. 165.
BELT kĕndi (? *Mal.* kĕndit).
BEND (*of river*) tanyuk *Mal.,* C. 25.
,, , TO jengog.
BĔRTAM bĕttoh *Sak.,* B. 784.
BETEL blök, A. 125.
BICEPS urad *Mal.,* sapal, A. 135.
BIG mĕnug, mĕnā, mĕnu *Pang.,* B. 203.
,, TREE tabu, tĕbo *Sem.,* B. 202.
,, , VERY rayā *Mal.*
BIRD chep *Sak.,* B. 216; (*unid.*) prôt, réhéreng, tĕngalak, baliek, ujé, hingkar.
BITE (*of snake*) nakab *Sem.,* B. 228.
,, (*of other animals*) nekab *Sem.,* B. 228.

BITTER kĕdeg *Sem.,* B. 232 (a).
BLACK renga *Sak.,* B. 236.
BLOOD loot *Sak.,* B. 248.
BLOW tohôl.
BLOW-PIPE élso (cf. *Sem.* sĕnlu and *Kenaboi* sĕláu, B. 261).
,, (*barrel of*) yö, ? B. 296.
,, (*thinner end*) lok.
,, (*inner*) ulah.
,, (*pictured ornament on*) chukéd.
BLUNT seil.
BLUSH senging.
BODY olah, ? *Sem.,* B. 321.
BOIL, A bisa.
BOILING (*of water*) na' dideh *Mal.*
BOIL, TO tĕrbud, H. 142.
BONE jaâk *Sak.,* B. 336.
BOUGH tabah *Sak.,* B. 345.
,, (*tree-fork*) chabak, champang, B. 345.
BOUNDARY nehob.
BOW (*weapon*) lôot *Sem.,* B. 354.
BOWS (*of boat*) kĕd.
BRACELET glâk (*Mal.* gĕlang).
BRAINS 'mog. ? cf., H. 48.
BREAK pĕlak *Sem.,* B. 372.
,, (*string*) gĕtoid *Sem.,* B. 374.
BREAST (*chest*) dada.
,, (*bosom*) bôt *Sem.,* B. 386.
,, (*hollow of*) chemob.
BREATH hĕmhum *Sak.,* B. 339.
BREATHLESS gĕshoi.
BRIDGE édur lug *Sen.,* B. 391.
,, (*plank of*) édur papan.
BRING kerop.
,, FORTH niyos.
BROTHER, ELDER kĕlii, B. 415 and 421.
,, YOUNGER pii't, ? B. 420 and 413.
,, -IN-LAW mĕnâi *Sen.,* B. 419.
,, ,, ELDER k'nggöing, L. 21.
BUILD, TO tael *Sak.,* D. 132; *b. a house* tael dik.
BURN nyo, B. 463.
,, (*a clearing*) é chur., B. 467.
BURNT (*tĕrbakar*) ako.
,, (*hangus*) nagi.
BURY tap. *Sem., Mon.,* P. 132.
,, (*a person*) kĕrup.
BUTT brol; *point of* dog.
BUTTERFLY tawag *Sem.,* B. 481.

BUTTOCKS janggab *Sak.*, B. 483A; tabrohked.
BUY bĕli *Mal.*

C.

CALL, TO kó *Sem.*, C. 8.
,, (*tiger-call*) kwi.
CARRY (*under arm*) kílid.
,, (*in both arms*) kod na tik, H. 15.
,, (*home*) tĕrma ni a dik.
CATERPILLAR kĕnor *Sak.*, B. 143 (a).
CATCH chab *Sem.*, *Sak.*, C. 49.
,, (*of tiger*) rot *Sak.*, C. 50; (*of bird*) jantus.
CAVE gogob (= *Mal.* gugup), H. 117A.
CENSER sĕbo' chĕrios.
CENTIPEDE ke'éb *Sem.*, *Khmer*, C. 66.
CENTRE sĕma pĕdik *Sem.*, M. 100.
CHAFF antah.
CHANT (*of wizard*) lamor.
CHARCOAL chĕngka *Sak.*, C. 77.
CHASE hô, F. 210.
CHEEK kapon *Sem.*, C. 81.
CHEVROTIN pĕlandok *Mal.*
CHICKEN kuis pug, F. 255.
CHIEF pĕnghulu *Mal.*
CHILD kuis sendi, C. 102.
,, yôs.
CHIN jaka *Sem.*, C. 113.
CHOKED sĕgshog *Sem.*, C. 119.
CIVET-CAT orar, jajô, k'nghut.
CLAW chĕndros *Sem.*, N. 7.
CLAY pechi (*Khmus* petté), E. 12.
CLEANSE sad, *Sem.*, *Sak.*, C. 142.
,, (*with water*) git.
,, (*the teeth*) é sig.
CLEAR (*a path*) chah *Sem.*, C. 296.
,, ,, harék.
CLEARING sĕlai.
CLENCH kod.
CLIMB (*a hill*) tengu.
,, (*panjat*) oid, A. 155.
CLIMBING PLANTS tingtek.
CLOSE chartu.
,, (*near*) unyon, S. 198.
CLOUD sagup *Sem.*, D. 16 (c).
COBRA taju slé' *Sem.*, S. 311.
,, , HOOD OF slé'.
COCK pug nanoi *Sak.*, *Sen.*, F. 255.

COCKROACH sör, gasur.
COCONUT (*tree*) trôp, kubur.
,, (*milk*) ok.
,, (*shell*) hōk.
,, (*beat*) talök.
COIL lat.
COLD dĕkad *Sak.*, C. 205 (c).
COLIC (*kĕmbong pĕrut*) gös.
COLLAR-BONE jaak jenlug, B. 336 (b).
COLLECT (*pile up*) chatu.
COMB (*of cock*) lĕmbing.
COMB (*honey*) henglok.
COME (*give here*) ok madoh, G. 29 and C. 221A.
,, (*here*) chi.
COMPANION chib ruab (= *jalan kawan*), G. 42.
CONSCIOUSNESS *sĕdar.*
,, , LOSS OF kĕdut.
CONSUMED (*by fire*) *sako; house cd. by fire* dik ako os.
CONTENTS (*isi*) olah.
CONTRACT janji *Mal.*
CONTRADICT bantah *Mal.*
COOK (*in bamboo*) lĕmang.
,, (*rice*) bĕrchĕt chana, C. 237, 238.
,, ,, subai.
,, (*toast*) pôi.
,, (*fry*) lak.
,, (*poison*) gap rok, C. 238.
,, ,, pol dog (*i.e. turning a flat surface with poison over and over at a fire*).
COOKED hoid chet, C. 236, 237.
COOKING-POT pĕriok *Mal.*
COPULATE 'ngnoi.
CORDS (*for baskets*) bĕrĕnchor.
CORPSE kĕbus *Sem.*, D. 50.
,, saro' *Sem.*, G. 16.
COUGH kohol *Sak.*, C. 253.
COUSIN kuman.
CRAB kantam *Sem.*, *Mon*, *Mal.*, C. 258.
CRACKED pelah.
,, bĕkah *Sem.*, B. 375.
CRAMP ? ji; sĕrbah.
CRAWL wöt.
CREVICE lör dör.
CROSS (*a stream*) ris tiu, W. 39.
CROSS-ROADS chintag.
CROW, A egag. *Sem.*, C. 276.
,, tadör pug, F. 255.
,, pirōt.

CRY (*weep*) maiyab, C. 285.
CURLY sog ba' rotan H. 1.
CURVED kĕnuain
CUT chok C. 296.
,, kĕtus C. 297.
,, (bĕlah) pug.

D.

DAM nyor
DAMAR got R. 72.
,, sĕgar tĕböl.
,, (*lutang*) got chah.
DANCE krejér.
DARK rengah *Sak,* B. 236.
DART sipéd.
,, (*butt of*) brol *Sem,* B. 301.
,, (*point of*) lajar.
DAUGHTER mĕnalih.
,, -IN-LAW nensab.
DAWN mad is E. 83 & D. 35.
DAY (*siang*) hoidy ess is D. 35.
,, (*two days hence*) maiya *Sak,* D. 42 (b).
,, (*lusa*) nar (=*dua*) T. 272.
DEAD kĕbus, hoig kabus. *V.* Corpse.
DEAF tuli *Mal.*
DECAYED (*burok*) hoidy sôh, 292 (b).
DEER (*rusa*) kasing D. 68 (a) & 81.
DEEP sindrok D. 66.
,, (*of sleep*) dât kĕnyang.
DELIRIOUS sasau *Mal.*
DELIVERY (*sudah bĕranak*) hoidj moh huis.
DESCEND rik *Sak,* D. 96.
,, (*tĕjun*) ta, D. 93.
DEW tĕngmĕng *Sak,* D. 102.
DIG pus D. 107 (b).
DIGGING-STICK *ad,* D. 109.
DIP (*hand in water*) rog :-e rog.
,, ma tiu.
,, (*clothes*) é ried.
DIRT (*on teeth*) ejed 'moing. T. 170.
,, (*under nails*) ejed chĕndros. N. 1.
DISAPPEAR sényab *Mal.*
DISEASE (*of skin*) tani.
,, (*kurap*) gas *Sem.* I. 46.
,, (*kudis*) manghi ? I. 51.
,, (*panau*) panu *Mal.*
DISLIKE na leglug *Sem.* L.17.

DISTANT jĕrô F. 29 (a).
DIVE slâp.
DIVORCE prak:—babo hoidt na prak *a woman gets a divorce.*
DIZZY tuitch.
DO tael *Sak,* D. 132:—yé toit tael = yé wud = *lazy.*
DOG chuak *Sem., Sak,* D. 143.
,, WILD chelök *Sem.* D. 148.
DONE, FINISHED hoidj, juil. A. 63.
DON'T jét; *don't go* jé achit: *d. sleep* jé aslog; *d. do it* jé at tael.
DOOR prengkäl *Sen., Sak.* L. 1.
DORSAL FIN chedél.
DOWN kroh D. 96, 165.
,, STREAM é halab *Sem., Sak.* D. 158.
DREAM é pok *Sem., Sak,* D. 168.
DRESS, TO eni. E. 76 (c).
,, (*to don clothes*) eni abat. *Sak.* C. 173.
DRIFTING é kwid. *Sak. D.* 163.
DRINK ök. D. 165.
DRIZZLE amis. *Sem.* R. 7 (a).
DROP (*of river*) kĕlut endré-endré.
,, (*of liquid*) pimés-pimés. R. 7 (a).
DROUGHT (*season*) penpik.
DROWNED na sĕnag.
DRUG ubat *Mal.*
DRUM baták.
,, (*to beat*) é pad baták.
DRUNK é kok ?D. 165.
DRY karich; *dry fish* kâ karich.
,, (*of padi*) salai.
DUKU chendruk.
DURIAN sempâ *Sem., Sak.* D. 189.
DYE öid.

E.

EACH nache nana.
EAR gintok *Sem., Sak.* E. 6 (a).
,, PENDANT suntik (*Mal.* sunting).
EARLY chinchuk.
EARTH (*bumi*) balik.
,, (*tanah*) tê *Sem., Sak.* E. 12.
EARTHWORM chachik (*Mal.* chaching).
EAST bengkah mat is D. 45, D. 35 & E. 83.
EAT chak, en chak E. 27.
EBONY chĕngka *Sak.* C. 77.
ECLIPSE ghana. (*Mal.*).
EDGE (*of knife*) gĕni.
EEL bĕlud *Mal.*
EGG tab *Sem., Sak.* E. 36.

EGG-SHELL singkor, senhur S. 234.
„ chegod ? S. 234.
ELBOW kěnöng *Sem., Sak.* E. 42.
„ kenü.
ELEPHANT chi'g *Sak.* E. 49.
ELEPHANTIASIS tanig.
EMBERS renghong *Sem., Sak.* C. 77 (b).
EMBRACE é 'öwe.
END (*ujong*) söi.
ENOUGH hoid chukub.
ENTER (*a house*) moij medik *Sak.,* E. 77.
ERECT é tud.
ESCAPE hoidj na dadok.
EVENING lāák *Sak.* D. 18.
EXTRACT (*chabut*) roid.
EXTINGUISH pud *Pang., Sak.* B. 256.
EYE mad E. 83 (a).
„ -BROW chinchuig *Sem.,* B. 431.
„ -LASH sempoi *Sak.* E. 85.
„ FLY grimolu.

F.

FACE mad (=*eyes*).
FADED layu *Mal.*
FAINT (*pengsan*) kěrlib *Sem.* D. 119.
FALL kěluk F. 13 (b).
„ (*of tree*) kūl F. 13 (a).
FAR jěro F. 29 (a).
FAST děras *Mal.*
FASTEN, TIE (*tambat*) é bug *Sem., Sak.* B. 213.
FAT bach'ôk *Sem.* F. 34.
FATHER bür *Sak.* F. 40.
„ -IN-LAW blo' *Sak.* L. 22.
FEAR tu *Sak.* F. 48.
FEATHER sentol *Sak.* H. 2.
FEED ugna c'ha.
FEEL, GROPE epud.
FEEL, GROPE (*rasa*) ji.
FELL, (*těbas*) e r'ô.
„ (*těbang*) gii F. 20.
FEMALE babok *Sem. Sak.* F. 61.
FENCE erded F. 79.
FEVER ji *Sem.* S. 187; děkad S. 185.
FICUS sog.
FIN (*of fish*) chingké.
FIN (*caudal*) poid sĕntar.
FINISHED (*habis*) hoidj y'ül F. 115.
FINGER (*little*) ki'yit.

FIRE 'ôs *Sem.* F. 124.
FIREBACK-PHEASANT pĕgōr *Mal.*
FIREFLY jalid.
FIRE-PLACE owal (ōal) *Sak.* F. 129.
FIRST (*dahulu*) nengneng anin.
FISH (*angle with rod*) kail *Mal.*
,, (*with line*) sĕndrai F. 144 A.
FISH *a* kâ F. 138.
FISHES *ikan tĕlan* ka nalig.
,, *kĕjar* kâ keju.
,, *kĕlah* pĕlah.
,, *rong* rûk.
,, *sĕlinang* sĕlimang.
,, *buang* bauk.
,, *aruan* ka ruán.
FISHING-ROD bawor.
,, -TRAPS bubu, tuar, slapû *Mal.*
FISH-WEIR marêk.
FLAY (*take skin*) kord katô S. 236 (c).
FLESH sig *Sem.* F. 170.
FLINT batu kawit.
,, rug S. 462.
FLOAT lumpong *Mal.* F. 175.
FLOOD tin ba'ag F. 178 & W. 30.
FLOOR nis *Sem.*, *Sak.* M. 62.
FLOWER bunga *Mal.*
,, (*white*) bunga ĕmping.
FLUTE sene 'oi F. 195.
,, (*small*) bangsi. *Mal.*
FLY, TO mahek.
FLY, A laled *Mal.*
FLYING LEMUR (*kubong*) kayô.
FOAM bubah *Sem.* W. 42.
FOETUS (*in womb*) makô (=*egg*) E. 34.
FOLLOW bĕrchü G. 34.
FOOT juk *Sak.* F. 220.
FORBID jet D. 123.
FORE-ARM chĕndrek *Sak.* F. 134 (b).
FORE-HEAD petuk *Sem.* F. 228.
FOREST (1) sengrok *Sak.*, F. 231 (b), *to the f.* ma sengrok A. 176.
,, (2) sĕrak *Sak.* F. 231 (b).
,, (3) (*sĕmak*) lĕmug *Sak.* B. 442.
FORGET wil ? D. 120.
FORKED champang.
FOWL pug *Sak.* F. 255.
FRESH (*of water*) hĕrék *Pang.*, *Sem.* N. 49.

FROG (*tuli*) sĕndrai.
„ (*deman*) tebeg *Sak*. F. 268., karog F. 272.
„ lingkong *Pang*. F. 270.
FROND (*coco*) sĕlah *Sem., Sak*. L. 32.
FRONT, IN dada.
FRONT (TOOTH) (moing) nus T. 170 & 168.
FRUIT beruk.
FRUITS:—
(*unid*) rarô.
(*tampuï*) tampa, tabeng *Sem*. T. 19.
(*kabang*) kabak ?R. 28.
(*rambutan*) shushog H. 1.
(*mĕstar*) mĕstar.
(*gomok*) hu.
(*pisang*) tĕluwil B. 42.
(*aboh mas*) brikleg.
(*jinteh*) ranik.
(*rambai*) rambi *Mal*.
(*duku*) chĕndrok.
(*pulasan*) grak, pahid R. 25, P. 225.
(*tebedo*) dĕkóh.
FRUIT-BAT kĕluek. B. 78.
FULL tebík *Sak*. F. 290 (b).
FUNGUS (*tall*) bĕrbut.
„ (*tree*) bĕrpog.

G.

GAPE go hôi *Sem*. M. 199 (a).
GAROTTE chĕkég *Mal*.
GASP (*pant*) sĕlud.
GAZE (*tengok*) ené S. 75 (a).
GET (*dapat*) evû; na bu.
„ (*fruit, jolok*) yōk.
„ (*pick up*) chod *Sak*. P. 68.
„ „ UP, ASCEND dĕvod.
„ „ „ , ARISE wog *Pang*. A. 156 (a).
GHOST saró *Sem*. G. 16.
GHOST jani kimort *Sem*. G. 18.
GILLS kĕnyar *Sem*. G. 23.
GINGER kayar.
GIVE ôg *Sem., Sak*. G. 29.
GLUE (*for shaft butt*) kedréd.
GNAT (*agas*) kĕbö *Sem., Sak*. M. 180 (b).
GO jib *Sem., Sak*. G. 42.
„ THERE jib manâ.
„ UPSTREAM galah *Mal*. U. 26 (a).
„ OUT hoidj howal.

GONG gok.
GOOD meg *Sak*. G. 66.
„ (*halus*) momis (e.g. bangsa).
GORE (*with horn*) timpah.
„ (*with tusks*) nakab.
GOURD sumbang.
„ (*for water*) labu *Mal.*
„ (*kundor*) sĕrdag.
„ (*pĕtulah*) mĕngkai.
GRAND-CHILD chuchor *Mal.*
„ -FATHER yak *Sem., Sak*. G. 87; dato' *Mal.*
„ -MOTHER jaja batu, *Sak., Sem*. O. 20, F. 61.
ya *Sem., Sak*. G. 87.
GRASP pegak.
„ (*stretching for*) körd.
GRASS rumpud *Mal.*
„ (*akar batu*) temtop.
GRASSHOPPER bilalang *Mal.*
GRATE huhur.
GRAVE saro' G. 16; *he digs a g*. é pug saro'.
GREAT-GRANDSON chinchit *Mal.*
GREEN belaür *Sem., Sak*. W. 98 (c).
GREY (*uban*) sakol.
GRIND (*giling*) gĕrlid.
GRIPES jani kabkud *Sem*. B. 160 (a).
GROPE pud pôm.
„ (*pass hand over*) slû.
GROUND tê *Sem., Sak*. E. 12 (a).
„ (*rising*) tệ lut.
GROW (*of hair*) löt.
„ (*of plants*) ehnai.
„ (*of child*) hit.
GROWL kui ab; hirr.
„ (*of tiger, elephant*) krik *Sak*. G. 124.
„ (*bark of dog*) jul *Sem., Bes*. B. 59.
GRUEL (*rice*) mĕngm.
GUITAR (*stringed instrument*) jurik.
GUMS lengchit *Sak*. G. 128.
GUATTA chĕbö *Sak*. S. 31.
„ (*ara*) chĕbö sog.

H.

HAIR sog *Sem*. H. 1.
„ (*of body*) sĕntol *Sak*. H. 2.
„ (*of legs*) sĕntol kĕmong C. 5.
„ (?) sĕntu mür.
„ (*of armpits*) sĕntol sĕnok.

HALT halek.
HAMMER pěnluk.
HAND tik *Sak.* H. 15.
,, (*back of*) tapak tik (*cf.* tapai ting H. 15).
HANDSOME meg *Sak.* G. 66.
HANG jôl *Sen.* H. 25 (a).
,, (*of bees' swarm*) tabak; *they h. in swarms* na gul en tabak.
HARD chěgod *Sem.* H. 31.
HASTILY (*lěkas*) kěnyang *Sem.* Q. 6.
HATCH cheh *Sem.* B. 373.
HEART (*hati*) e bud.
HAWK (*bird*) klak *Sak.* E. 4.
,, (*in spitting*) sladík.
HAVE (*ada*) mok *Sem., Sak.* B. 38.
HE nana *Sak.* T. 51 (e).
HEAD kui *Sem.* H. 46.
HEAD-BAND tingtek.
HEAD-DRESS tempo'.
HEAD-MAN batin *Jak.*
HEAP (to, *earth into grave*) düt; *h. wood on fire* kod tama düt pâhôs.
HEAR kiôk *Sak.* H. 60 (c).
,, (*distinctly*) ta' lalah.
HEAVY nyoh *Sem.* H. 88.
HEEL děldul *Sem.* H. 69.
,, (*back of*) katik.
HELP tolúk *Sak.* H. 73.
HERE 'anöh.
HERON děnak.
HICCOUGH segdug.
HIDE kerdût, kěrdû.
HIDEOUS la'üs U. 7.
HIGH jěrôk *Sak.* D. 66.
HILL jělma *Sem., Sak.* H. 87.
HILLOCK tangköl.
HIP janggab *Sak.* B. 483 A.
HITHER chi maduh.
HOARSE gagab (? = *Mal.* gagab).
HOLE (*of snakes*) sěndrok.
HOME (*to go h.*) ma dik *Sak.* A. 176, H. 153.
HONEY lek *Sem.* H. 119.
,, -COMB sorp.
HOOK (*for fish*) mad kail E. 83. + *Mal.*
HORN palok H. 126 (a).
,, -BILL nahég; těrip: (*rhinoceros*) tukub *Sem.* H. 133.
HORNET (*panah liang*) hug, hong, *Sem.* H. 135.
,, (*těbuan*) éng-wang.
,, (*kěrawai*) kěrawái *Mal.*

HORSEFLY (*pikat*) chapud *Pang*. H. 138.
,, (*small*) galul ?F. 200.
,, (*smaller*) sĕbik M. 180 (c).
HOT buid *Sem*. H. 142.
HOUSE dik *Sak*. H. 153.
HOW rélok *Sak*. W. 77 (b).
HUM (*of flying bees*) hek, chenghek.
HUNGRY chĕrôk *Sak*. H. 169.
HURT (*wound*) pok W. 142 A.
,, (*burn*) siek.
,, (*smart*) pajid.
HUSBAND tö *Sak*. M. 16.

I.

I hä I. 3.
IBOL ibul (*Mal.*).
ILL ji' *Sem*., S. 187 (a) :— *the man is ill* sĕnoi na ji'.
ILL (*seriously*) brâp.
IN kĕloid *Sak*. I. 27.
INCISE sôr.
INSIPID (*of food*) belap.
,, (*basi*) nasi uk.
INTESTINES eb hik B. 161.
INTOXICATED ko' *Sem*. V. 22.
INVULNERABLE to' lab.
IPOH (*poison*) jelók ?P. 175.
,, (,,) rok.
,, (*a creeper*) bĕrill.
ITCH (*kudis*) mĕnghing.
,, (*kurap*) gâas *Sem*. I. 46.
,, (*puru*) choid *Sem*. I. 45.
ITCHY béhetch.

J.

JĔLUTONG trok badok *Sem*. J. 4.
JESTING chachor.
JOIN (*ubong*) cherod J. 9.
JOIST (*gĕlĕgar*) chĕnáro.
JUGULAR VEIN na lôd (?).
JUNGLE (*big*) té ryā E. 12.
,, (*medium*) té amis.
,, (*bĕlukar*) lĕmog *Sak*. I. 442.

K.

KAMPONG sĕpüah. ?H. 159.
KĔLĔMBAI Kĕlĕmbai.
KICK (*backwards*) tût *Sem*. K. 25.
,, (*sepak*) sipah.

KILL phlûk ?H. 126 or B. 257.
,, (*self*) é phluk olah hari.
KITCHEN wal *Sak.* F. 129.
KNAPSACK (*small*) ranoh.
,, (*big*) raiah.
KNEE karöl *Sak.* K. 41.
,, sip.
KNEE-CAP ho karöl *Pang.* K. 40 (a).
KNEEL kelkröl ?B. 176.
KNIFE landab.
,, (*edge of*) gĕní.
,, (*blade of*) paheng C. 126.
,, (*handle*) rĕmpagi.
,, (*pisau raut*) raud *Mal.*
,, (*parang*) kenguīn.
KNOT, TO kual.
KNOW, TO lék *Sak.* C. 160.
KNUCKLES tolak tenlek.

L.

LADDER rengkang *Sak.* L. 1.
,, (*sigai*) chuad.
LARGE raiya *Mal., Sk.*
LATHE sisak.
LAY (*eggs*) tab. *Sem.* E. 36.
LEAVES sĕlâ *Sem.* L. 32.
LEAK bochor *Mal.*
LEAN (*thin*) suâk ?T. 68.
,, (*incline*) chundut.
,, (,, *against*) dudau.
LEAN, TO dangor *Mal.*
LEAP (*down*) nata.
,, (*as monkey*) lompad *Mal.*
LEARN tĕning lek C. 160.
LEARNED hoidj e lek.
LEAVE prâh ?A. 65.
LEAVINGS sisak *Mal.*
LEECH (*lintah*) jĕtū L. 4.6.
,, (*pachat*) kantag.
LEFT-HAND (*side*) ma' yil L. 48.
LEG (*calf*) kĕmong *Sak.* C. 5.
LET balai.
LICK böid *Sem.* L. 64.
LIE (*to*) gô ?F. 20.
,, (*down on arm*) nam sĕlog *Sak.* S. 249; chĕning.
,, (*on back*) na bĕrpah.
,, (*face down*) kémkúp.

LIGHT (*in weight*) haiyó' *Sem.* L. 79.
,, (*a fire*) nyor ôs *Sem.* F. 124.
LIGHTNING kilad *Mal.*
LIKE (*suka*) na hod *Sem.* W. 14 (b).
LIME (*for birds*) chĕbur.
LINE sĕndrái.
LINED (*wrinkled*) karud *Mal.*
LIPS sentor *Sak.,* H. 2.
LISTEN kiyok *Sak.,* H. 60. (c).
LITTLE amis *Sak.,* S. 281.
LIVE(*dwell*) gūl *Sak.,* S. 222 (a).
LIVER hup *Sak.,* B. 380 (a).
LIZARD to' keh, chéag.
,, (*mĕngkarong*) tarog.
,, (*flying*) chalog *Sem.,* L. 115.
LOFTY jĕrok *Sak.,* D. 66.
LOIN-CLOTH lat ?E. 76 (b).
LONELY sengô.
LONG (*since*) líu *Sak.,* O. 21.
,, (*in space*) jĕrók *Sak.,* D. 66.
LOOK (*at*) nê *Sak.,* S. 75 (b).
,, (*aside*) pad; chenleg.
,, (*down*) nê matê = *Sak.,* D. 96.
,, (,,) nê habalik.
LOOSE (*longgar*) kalok.
,, (*lĕpas*) tĕrhual.
LORIS tampil.
LOSE alah *Mal.*
LOSS (*rugi*) pimah.
LOST é rejĕruj *Sen.,* L. 140.
LOUSE chê *Pang., Sem.,* F. 169.
LOW ĕnté' *Bes.,* E. 12 (c).
,, (*country*) lĕgup.
LOWER jât.
LUMINOUS (*of cats' eyes*) chĕra' nglang.

M.

MAGGOT kĕmor *Sak.,* B. 143 (a).
MURAI bĕrai.
,, HUTAN chem tap B. 216.
MAIDEN mĕnaleh *Sak.,* G. 28.
,, kédhud.
MAKE, TO ta'el *Sak..* D. 132.
MALE (*young*) léotó Sak., M. 16.
,, (*old*) tétâ M. 16.
MAN sĕnoi *Sak.,* M. 26.
,, (*very old*) krâl.

MANGO manchang, *Mal.*
MANGOSTEEN sĕmĕsta’, mĕsta M. 36.
MANY kĕmbir.
,, (*how?*) rop sĕnoi W. 80 (b).
MARK (*painted on face*) ’nggep.
,, (*tattoo*) chemod.
MARRY na terma.
MASSAGE é sĕgi’.
MAT (tikar) apil *Sem., Sak.,* M. 63 (a).
MATCHES siab.
MEASURE sukad *Mal.*
MEAT sig *Sem.,* F. 170 (a).
MEDICINE ubad *Mal.*
MEET bu *Sem.,* M. 80.
MELT hanchur *Mal.*
MEMBRANE (*of egg*) péher.
MĔMPĔLAS (*leaf*) pasug.
MĔNGKUANG séké’ ?P. 28 kajak.
,, (*pandan*) panat.
MĔRANTI (*tree*) bodag.
MĔRBAH (*bird*) chachar.
MIDDAY bĕkud *Pang.,* H. 141.
MIDNIGHT laiyég *Sak.,* .D 18.
MIDST (*sama*) pĕdik *Sem., Sak.,* M. 100.
MIDWIFE (*old woman*) jajar.
MILK bôt *Sem., Sak.,* B. 386.
MILLIPEDE (*black*) taluk *Sem.,* B. 141.
,, (*red*) tilong ?B. 141.
,, (*red luminous*) kéjej.
MILLET jĕnlai *Mal.*
MINE ri: *it is m.* ri yé.
,, ria ap.
MIST sagub *Sak.,* D. 16 (c).
MOLAR moing tĕngip *Sak.,* T. 170.
MOMENT IN A (*instantly*) sĕlab.
MONITOR-LIZARD (*biawak*) baget *Sem.,* L. 119.
,, ,, (*gĕriang*) gĕriek.
MONKEY (*lotong*) talu’ *Sem..* M. 147.
,, (*kĕra*) jilao *Sem.,* M. 142.
,, (*bĕrok*) bawaj *Sem.,* M. 134.
,, (*unid*) kakok bĕrkas ?M. 130.
MOON gĕchék *Sem.. Sak.,* M. 161: *there is no m.* hoid da gĕchék; *new moon* gĕchék päi; *rise of m.* liuwal, *set* kenchog.
MORNING chenchuk.
MORTAR gûl *Sak.,* M. 179 B.
MOSQUITO kŭbuk *Sem.,* M. 180 (b).
MOSS samuil; lerbur.

MOTH jĕrĕgad.
MOTHER nyoh M. 193.
,, -IN-LAW blôk Sak., 22.
MOUNTAIN jĕlmol *Sem.,* H. 87.
MOUSE-DEER (*napoh*) napoh *Mal.*
,, (*kanchil*) bechok.
,, (*pĕlandok*) pĕlandok *Mal.*
MOUTH nyang *Sak.,* M. 199 (b).
,, (*of river*) bok.
,, (*to put in mouth, suap*) é lut.
MOUTH PIECE (*of blow pipe*) tĕboh Sak., B. 272.
MOVE (*pindah*) jog *Sem.,* G. 43.
MUCUS léhiek S. 391.
MUD lĕbák *Sak.,* M. 214.
MUSH (*straw*) hadâ.
MY (*father*) ri haba bu.

N.

NAIL chĕnĕros *Sem.,* N. 1.
NAME kĕnii' *Sem.* N. 8: *what is his n?* ülok nama kĕnii'?
NARROW nged.
NAVEL panik *Sem.,* N. 17.
NEAR dĕkad *Mal.*
NECK (*nape of*) tang'u. *Sak.,* N. 27.
NECKLACE gaj nöij.
NECK charuag.
,, (*valley*) loag.
NEPHEW kuman N. 41.
NEST (*of bee, bird*) söp; *bird's n.* söp chep.
NEW pai *Sak.,* N. 50.
NIBONG nibong *Mal.*
NIGHT renga.
NO hoi.
NOISE (*rioh*) chītor.
NOSE meng *Sak.,* N. 98.
,, (*ridge of*) kĕrduk meng.
,, (*stud for*) pĕnlog.
NOSEGAY chadog.
,, sönteh.
NOSTRIL lĕnglok meng.
NOT to' *Sak.,* N. 69.
NOTCHED takeh *Mal.*
NOW na kal *Sak.,* N. 111.

O.

OPEN wog *Sak.,* O. 40.
,, (*a durian*) chég.
,, (*mangosteen*) chĕked.

ORDER ôr.
ORPHAN kĕpúg.
„ (*only survivor of family*) na rĕgrig *Sak.*, O. 58.
OTHER mémöi.
OTTER kabok *Sem.*, O. 64.
OUTSIDE na-bek.
OUTSTRETCHED sĕrjeh.
OWE dös.
OWL bakah.

P.

PAD deldol.
PAIN (*in swallowing*) galar.
PANTHER ab renga.
PAPAYA bĕrk bĕtek F. 280 *Mal.*
PARE (*raut*) sôr.
PATCHOULI nilam *Mal.*
PECK choh *Sem.*, *Sak.*, C. 296.
PEEL wog v. open.
„ (*durian*) bleh.
„ (*rind*) sinkôr.
„ (*bark*) cheg v. open.
PENIS loah *Sem.*, *Sak.*, P. 53.
PERCH debûd *Sem.*, C. 52.
PERFORATED pĕchuk.
„ (*fruit*) enk loij sendrôk.
PERHAPS bilbil.
PERSPIRATION bukéd *Sem.*, *Sak.*, H. 141.
PĔTAI trô betar.
PHEASANT (*fire-back*) chelúk.
„ (*merah mata*) pĕgör *Mal.*
PICK (*flower*) tois *Sak.*, P. 149.
PICK (*banana*) tid'chok. ?P. 68.
PIEBALD bĕrtutual.
PIERCE chĕlug.
„ (*cut*) lab.
PIG changgai *Sak.*, P. 80 (a).
„ (*wild*) chĕrūr ?P. 82.
PIGEON (*pergam*) béku.
„ (*punai*) mĕnyut *Pang.*, *Sak.*, P. 93.
„ „ tanah chep té.
PILLAR tungul *Mal.*
PILLOW (*use arm as*) chĕkol.
PIMPLE bud chud.
PINCH pied P. 106.
PINE-APPLE sĕké'.
PINION k'ngyêk.

PIP (*of durian*) né ulas.
PIPE (*bamboo*) rĕmbad.
PLACE (*spot*) té P. 118.
„ döl *Sak., Sem.,* H. 153 (a).
PLAIT (*hair*) sanggul Mal.
„ (*rope*) kĕntal (*?Mal.* pintal).
„ (*anyam*) tâ ch; sĕrĕngget.
PLANT (*seed*) tâp *Sak.,* P. 132.
PLAY juah; juah prud.
„ (*a drum*) pad ?S. 496 (c).
PLUCK OUT roid.
PLUG sol.
PLUMAGE sĕntol *Sak.,* H. 2.
PLUNDER angkid.
POCKMARKED nyong.
POISON chĕbur.
POISON (*to tap*) pôk.
POKE tĕbug.
PORCUPINE kus *Sen.* P. 185; töt; kelêg.
„ (*quill*) jalar kus *Sem.,* T. 94.
POUND, TO si.
PRAWN sĕmbug.
PREGNANT makô E. 34.
PRESS (*tĕkan*) jūg, ngeg.
„ (*up*) tĕrot.
PRETTY neg G. 66.
PRICK chöl.
PROD chok.
PROD (*sokong*) klat.
PROSTRATE pada'.
PRUNE parak.
PULAI puli *Mal.*
PULL (*tarek*) jéng *Sak.,* P. 227.
„ (*chabut*) ĕroidj.
PULSE nadir *Skt., Mal.*
PUNGENT (*pĕdas*) pĕjed.
PURR gür.
PURSUE hô.
PUSH (*tolak*) tolag *Mal.*
„ (*back*) dos.
PUT döl H. 153 (a).
„ OFF (*tanggoh*) rît.
„ OUT (*padam*) pud *Sem., Sak.,* B. 256.
„ ON (*clothes*) ĕnî.
PUTRID sé'êg S. 292 (b).
PYTHON rĕlai *Sen.* S. 320 *spp.* rĕlai padak, r. batu, r. té, r. tabak, r. tirok.

Q.

QUARREL (*of children*) bĕrchachor.
QUESTION sĕmain Q. 6.
QUICK kĕnyang *Sak.,* Q. 6.
QUID (*of betel*) blok.
QUIVER chukég; lök.
.. (*cover*) chĕngkub, chingkup.
.. (*strings*) chĕnois.
.. (*packing for*) samui.

R.

RAFTER kaséo.
RAIN hujat *Sak.,* R. 12.
,. (*light*) hujat amis S. 281.
RAINBOW nyibnyab.
RAINY SEASON lĕsap *Sak.,* R. 6.
RAMBAI rambi *Mal.*
RANK (*hanyir*) pĕ'i.
.. (*chĕngis*) chĕngis *Mal.*
RAP sĕntog.
RAPID (*jĕram*) jĕruk *Sak.,* R. 29.
,. (*chĕgar*) chigár *Mal.*
RATTAN tingtek *Sak.* R. 37 (c); *spp.* tek riau R. 41 D; tek lok; t. dahnan; t. daué; t. klau chuok; kĕrada; hâg; gĕrtas; gatek.
RAVE tato ta'na lek.
RAW aloi.
REACH (*arrive, tiba*) ĕngloi A. 146.
READY simpat.
,, hag ning wing.
REAP (*tuai*) kĕtaman C. 295.
., (*kĕtam*) tĕgnug.
RECEIVE dawah.
RECENTLY pai nai jĕrüd, N. 50.
RED chĕluk *Sak.,* R. 34.
REDEEM jül.
REFUSE (*ta'mahu*) i jĕ' *Sem.,* D. 123.
RELATIVE (*younger*) pŭ.
,, (*elder*) kĕlö.
REMAIN pra'.
REMEMBER jĕlek.
REMOVE chit.
REQUEST (*minta*) oid.
RETIRE undur *Mal.*
RETURN yĭma ?R. 83.
RHINOCEROS nagab *Sem., Sak.,* R. 90.

RIB chĕrös *Sak.,* R. 102.
RICE (*nasi*) chăna E. 27 (b).
,, (*paste*) blap.
,, (*sweet*) bĕhéd.
,, (*bitter*) bĕchuit.
,, (*bĕras*) chĕndroi *Sen.,* R. 112.
RIDE ELEPHANT oid.
RIGHT ’tok ?R. 128.
RIPE jĕnip *Sak.,* R. 137.
,, (*pĕram*) tĕrnip.
RISE (s) nawal.
,, gĕché’.
,, (*bangun*) wog.
RIVER tiu *Sem., Sak.,* W. 30.
ROAST sĕrpad.
ROLL balut *Mal.*
ROLL (*up sleeve*) chimpal.
ROOF nai.
,, (*of mouth*) kĕnög.
ROOT (*umbi*) trop.
ROTTEN sasau.
ROUGH siyak.
ROUND kĕldûl.
RUB lĕbor.
RUBBISH (*sampah*) sap.
RUN dado *Sem., Sak.,* G. 44.

S.

SACK (*karong*) chĕnok.
SAFFRON rĕmĕd.
SALIVA lĕlujek.
SALT garam.
SAND pantir S. 27.
SATED bĕhi *Sem.,* G. 72.
SAY lo’oh *Sem.,* S. 359.
SCAB chĕtok tĕmô.
,, (*kudis*) kĕruntong.
SCAR dîl *Sem.,* P. 118.
,, (*parut*) chĕnod.
SCARPE (*kikis*) kas.
,, (*raut*) sôr.
,, (*kukur*) kukud.
SCRATCH (*of fowl*) sapo.
SCORPION mangai *Sak.,* S. 46.
,, (*small*) tĕrlap.
SEARCH kê *Sak.,* S. 60.
SEASON jaman (*Mal.* zaman).

SEE tenyor.
SEND mad (= eyes) ; kirip ; hanted.
SENTUL so'ug.
SET (*of sun*) pĕchug.
SEW jayid.
SHADE wog *Sak.,* S. 127.
SHADY semorig.
SHAKE (*e.g. fruit*) jo.
SHALLOW penyon.
SHARP (*tajam*) pĕhing.
„ (*pĕrit*) prêd.
SHARPEN sig *Sak.,* S. 144.
SHAVE lô 'sog.
SHIN kĕmong.
SHINE rĕmĕlah.
SHIVER dĕkad.
SHOOT sĕlu.
SHORT pendé.
SHOULDER porg, S. 169 (6).
SHOVE tolag.
SHRIEK karau.
SHUT chĕrto'.
SICK ji *Sem.,* S. 187.
SIEVE jaman.
SILENCE kedut.
SILENT sĕngé.
SIMPLES selak.
SIN bĕrdos (? = *bĕrdosa Mal.*)
SING gĕnabag *Sem.,* S. 212.
SIP tohual.
SISTER (*elder*) kĕlo' babo B. 415 & 419.
„ (*younger*) pu' babo B. 414.
„ -IN-LAW mĕnĕri B. 419.
SIT gul *Sak.,* S. 222.
„ (*with legs and arms dangling*) keluel tabag.
„ (*squat*) jantek.
SKIN kato' *Sem.,* S. 236 (b).
„ (*of fruit*) singkor.
„ (*disease; kudis*) tĕmat.
„ („ ; *kurap*) gas. I. 46.
„ („ ; *puru*) choid.
SKULL kuï *Sem.,* S. 239.
SKY balik.
SLACK lĕdik.
SLAP gĕter.
SLAVE cho.
SLEEP selog S. 249 ; *on side* kiton ; *legs crossed* juwas.

SLEEPING-PLACE bĕnulé.
SLENDER suĕn.
SLIP sĕlig. *Sak.,* S. 262.
SLIPPERY blaj.
SLOPING lodau.
SLOW hakuï *Sem.,* S. 272.
SMALL amis *Sak.,* S. 281.
SMALL-POX chĕne; nyani tot.
SMASHED pĕchuk.
SMELL ĕseg. S. 292 (b).
„ (*to*) öar.
SMILE semeg.
SMOKE pĕdug.
„ (*to*) emjod.
SNAKE sĕlek; taju *Sem.,* S. 311, *ular lidi* t. padi, *striped s.* t. pĕlache, *cobra* t. eg.
SNAKE bakau.
SNARL nanis.
SNATCH rös.
SNEEZE kohól.
SNORE sĕmangár *Sak.,* S. 328.
SOB segdug.
SON kues babor.
„ IN-LAW mĕnsau *Sem.,* L. 25.
SOOT chengkah.
SOOTH-SAYER tinang.
SOOTHE sĕneg.
SORE pejed.
SORROWFUL mĕriso (? = *mĕrisau* Malay).
SOUL roh (*Mal., Ar.*).
SOUND kuï.
„ (*of sleep*) kĕnyang *Mal.*
SOUR (*masin*) brég.
„ (*masam*) bechut.
SOURCE cheg.
SOW ruï.
SPEAK tĕnur.
SPIDER tawi, tawo, *Sak.,* S. 378; manang; sok.
SPIKE-TRAP chĕmpog.
SPILL kakô.
SPINACH wüg.
SPIRIT gĕlawi; jani; chené; lépug; klab; ngôi; ludo; pĕngho.
SPIT gĕtah *Sak.,* S. 390.
„ (*sĕmbor*) prok.
SPITTLE liĕk.
SPLASH chichu.
SPLINTER simpang.

SPRAIN alij.
SPREAD dab.
SPRING mu tuï.
„ -GUN răch.
SPRINKLE koh.
SPROUT tarol.
SPUR (*of cock*) pus.
SQUINT chulag.
SQIRREL kĕdi; sĕkor; chadé;
STAB takoh.
STALE nasog.
STALK tangké.
STAMMER gagah.
STAMP (*heel*) temtâm.
„ (*sole*) jantet.
STUD subak (*Mal.* subang).

T.

TAPIR barad *Sem.,* T. 26.
TESTICLES bako ?E. 34.
„ kiyois.
THIN (*nipis*) pĕhér.
THITHER (*ka-situ*) na ana nong T. 51 (e).
THROAT gĕlah *Sak.,* N. 28.
THUMB tahik.
TOOTH (*back*) tĕngup T. 170.
TURMERIC rémég.

U.

UPSTREAM (*to go*) é galak.

W.

WASP (*naning*) tengtok *Sak.,* H. 135 A.
„ (*kĕrawai*) tajud.
„ (*tĕbuan*) ĕnguang H. 135.
WATCH yéô.
WATERFALL t'au W. 30.
WATER tiu W. 30.
WAX (*in ear*) éjég.
„ (*lilin*) sud *Sem.,* W. 48.
WEAR nî; lat *Sak.,* E. 76 (c).
WEAVE tâ atch.
WEED, TO mĕrumpud *Mal.*
WELL, A tĕlaga *Mal., Skt.*
„ (*fit*) hod named.
WET ka'ayd *Pang.,* W. 73.
WHAT lok *Sem., Sak.,* W. 77 (a).
„ NEWS lok gahé.

WHEN bil ?W. 91.
WHET seg *Sak.*, S. 144.
WHISPER bisig *Mal.*
WHISTLE chemer hau.
,, (*of man*) ho’oid *Sem.*, W. 97 (a).
WHITE bieg, buyog *Sem.*, *Sak.*, W. 98 (b).
WHO na ch’ô; *who is that?* na chô ana?
WHY l’ô kĕrja W. 77.
WIDE (*luas*) lĕgar (? *Mal.*, lĕga).
WIDOW janda *Mal.*
WIFE léh *Sak.*, F. 60.
WILD liar *Mal.*
,, -CAT chigchog.
,, -DOG jĕlog D. 148.
,, -PIG changgée *Sak.*, P. 80.
WILL hod *Sak.*, W. 14 (b).
WIND hĕlhul *Sak.*, S. 478.
WINDPIPE ganggan.
WING kenyeng *Sem.*, *Sen.*, W. 117.
WINK kanyeb.
WINNOW jĕnlog.
,, (*tampi*) gép.
WOMAN babo *Sem.*, F. 61.
WOOD-PECKER tĕranik.
WORLD té E. 12.
WORM chachik *Mal.*
WORN-OUT saso’.
WRESTLE kalud.
WRIST chĕriel ?A. 134 (c).

Y.

YAWN kah’ôi.
YELLOW kuning *Mal.*
YES hur *Sen.*, *Sak.*, Y. 27.
YOU ha *Sak.*, Y. 34.
,, (*polite*) ar.
YOUR yé.
YOUTH (*male*) laut’ô.
YOUNGEST tialé to’ *Sak.*, M. 16.

Remarks upon Certain Currency Notes, Coins and Tokens Emanating from Malaya During and After the War.

BY SIR JOHN A. S. BUCKNILL, M.A.

The rise in the value of Silver (and, incidentally, of many other metals) was a very noticeable feature during the War.

There were, no doubt, numerous reasons for its appreciation but it would be outside the scope of this paper to attempt to discuss them in any detail.

It is sufficient to point out here that there were continuous and serious political disturbances in Mexico which checked greatly the output of silver from that highly argentiferous region: that as is generally the case in the East when any universal feeling of apprehension or trouble is felt, there was much hoarding of coins and a corresponding withdrawal from circulation of a very large quantity of metallic currency: and that huge issues of notes by many of the belligerent States tended to enhance the intrinsic worth of almost every form of coinage.

For about a year after the commencement of hostilities silver remained steady but in December, 1915 a progressive upward movement commenced which reached its culminating point about the end of 1919: since that date there has been a sharp and continued decline.

The sub-joined table shows roughly what took place:—

Date.	Value per ounce in London.		Date.	Value per ounce in London.	
	s.	*d.*		*s.*	*d.*
31. 3.14	2	$2\frac{3}{4}$	30. 6.17	3	$3\frac{1}{2}$
30. 6.14	2	$2\frac{1}{16}$	30. 9.17	4	$0\frac{1}{2}$
30. 9.14	2	0	31.12.17	3	$7\frac{1}{2}$
31.12.14	1	$10\frac{3}{4}$	31. 3.18	3	$9\frac{5}{8}$
31. 3.15	1	$9\frac{3}{4}$	30. 6.18	4	$0\frac{1}{2}$
30. 6.15	1	$10\frac{7}{8}$	30. 9.18	4	$1\frac{1}{2}$
30. 9.15	1	$11\frac{11}{16}$	31.12.18	4	$0\frac{7}{16}$
31.12.15	2	$2\frac{3}{16}$	31. 3.19	4	$1\frac{3}{4}$
31. 3.16	2	$4\frac{15}{16}$	30. 6.19	4	$5\frac{3}{4}$
30. 6.16	2	$7\frac{7}{10}$	30. 9.19	5	$2\frac{1}{8}$
30. 9.16	2	$8\frac{15}{16}$	31.12.19	6	$4\frac{1}{4}$
31.12.16	3	$0\frac{1}{2}$	30. 3.20	5	11
31. 3.17	3	0	21. 9.20	4	$11\frac{1}{2}$

It would be necessary to look back very many years to find silver at a value even approaching that which it attained in the year succeeding the War.

In 1870 the price per ounce was about 5*s.* 0*d.*; in 1880, 4*s.* 4*d.*; in 1890, 3*s.* 11*d.*; in 1900, 2*s.* 4*d.*; and in 1910 about 2*s.* 0*d.*

The result of the appreciation was, that, as soon as the silver coins current in British Malaya became, as to their silver contents, worth more than their face value, they were collected by adventurous individuals, sent out of the country and melted down for disposal as bullion: and, as these coins were of high silver fineness, this undertaking became a profitable one directly the price of silver touched about 3*s.* 0*d.* per ounce: and, although legislation against both export and hoarding was soon introduced, such measures were not, it is to be feared, of much practical effect. The dollar soon vanished and the 50, 20, 10 and 5 cent pieces became rapidly scarce: in 1917 the shortage began to be very serious whilst the bronze coinage (1, ½ and ¼ cents) commenced also to disappear. The Government was faced with a difficult situation in its endeavours to provide a suitable substitute for the disappearing currency. The proposal to mint coins of intrinsically very low value could not be immediately carried out: the Indian Mints were extremely busy and, though an effort was made to obtain assistance from the Royal Siamese Mint at Bangkok, no aid could be, owing to technical causes, gained from that Institution: indeed it was not until nearly three years later that new coins appeared to replace those which had been removed from circulation.

In the meantime something had to be done and the first step was the issue of a locally made 10 cent note. These notes were printed on rather thick coarse paper of open texture at the Government Printing Works, Singapore: they tore easily and quickly absorbed dirt and were consequently not very popular.

They measured about 117 × 76 mm. and were coloured in yellow, green and black on the front and in red on the back.

The design was very simple: the face of the note has a yellow back ground about 87 × 59 mm. in size and consisting of a narrow border about 16 mm. in width and, within this, the words "Ten Cents" repeated in a series of horizontal lines in small letters.

Overprinted on this background, in green, lies a narrow green border 14 mm. in width; within this in green appears a small representation of the Royal Arms at the top in the centre: underneath there runs the phrasing:—

THE GOVERNMENT

OF THE STRAITS SETTLEMENTS.

Promises to pay the bearer on demand at Singapore.

TEN CENTS.

Local Currency for Value received.

The above with the exception of the words "Ten Cents" (which are in black) is in green.

In the left hand top corner appears within a black circle "10 Cents." In the left hand bottom corner "Ten cents" in Chinese and to the right of that the serial number of the note; below the main inscription and to the right the signature of the Treasurer and the word "Treasurer": in the right hand bottom corner "10 cents" in Tamil and in the right hand top corner "Ten cents" in Malay: all the above is in black.

On the back of the note is a decorative design of scroll work: in the centre a representation of a ten cent Treasury Revenue embossed stamp cancellation: all in red.

The first issue was made on October 8th, 1917 and bore the signature of the Hon. Mr. Hayes Marriott then acting Treasurer [Pl. I. figs. 1 and 2.]: later, the issue starting on January 2nd, 1919, the notes bore the signature of the Hon. Mr. A. M. Pountney, C.B.E., the Treasurer of the Straits Settlements. [Pl. II. fig. 3].

Very large numbers of these notes were put into circulation and the value of those issued by September 22nd, 1920 was $1,925,484. 80 cents.

On April 22nd, 1920 a new Ten Cent note made its appearance: they were on proper India paper and were engraved in London by the well known London firm of Messrs. Thomas de la Rue and Co., Ltd. They measured about 108 × 63 mm. and were of a handsome and artistic design. [Pl. III. figs. 4 and 5].

A pale olive green border, containing the value in white in English, Chinese, Tamil and Malay, surrounded a handsome scroll work background of pale brown over which, in pink, stands a representation of the Royal Arms and the words:—

THE GOVERNMENT

OF THE STRAITS SETTLEMENTS.

Promises to pay the bearer on demand at Singapore.

TEN 10 CENTS.

Local Currency for Value received.

(Signature)

Treasurer.

The serial number appears in black at the two top corners of the note.

On the back of the note appears the representation of a dragon in white and pale green and the value in English, Chinese, Tamil and Malay in the four corners.

By September 22nd, 1920 the value of these notes issued was $680,000. The locally manufactured ten cent notes were extensively counterfeited and a great many of these forgeries circulated side by side with the genuine ones.

On January 21st, 1918 an issue of Twenty-five cent notes commenced. These were prepared at the Government Survey Office at Kuala Lumpur, Federated Malay States. (Pl. IV. figs. 6 and 7). The value of these notes in circulation by September 22nd, 1920 was $39,825. I was recently informed that these twenty-five cent notes were being withdrawn from circulation as occasion permitted.

The twenty-five cent note was a better looking production than the local ten cent paper currency. They measured about 108 × 75 mm. The material was a fairly thin white paper closely striped with narrow perpendicular pale pink lines. On the face was first printed an elaborate ornamental design (in orange) and outside this (in black) a border of heavy spandrels with the figures "25" in white in a black circle at the top corner and "Cts" in similar circles at the bottom corners: midway on the right, and left and at the bottom, in Tamil, Malay and Chinese respectively and in black on white scrolls "25 Cents." Over the orange pattern and printed in black:

THE GOVERNMENT
OF THE STRAITS SETTLEMENTS.

Promises to pay the bearer on demand at Singapore.

TWENTY FIVE CENTS.

Local Currency for Value received.

(H. MARRIOTT)

The Royal Arms. *Ag. Treasurer.*

(Serial letters and number.)

On the back of the note appears in black the representation of a tiger standing amongst long grass super-imposed upon a decorative orange coloured background in the upper corners of which are, in white, the figures "25" and in the lower corners also in white "Cts."

The issue of notes undoubtedly saved the situation but, even so, small change was often a great difficulty and postage stamps and tramway tickets were sometimes offered.

I heard of Chinese Towkays up-country utilizing notes and vouchers or "good-fors" of their own, and a number of tokens or tallies, (some of which are described in this Article) made their appearance in different localities.

In 1919 a large quantity of debased 5, 10, and, I understand, some 20 cent silver pieces were issued for currency in British Malaya from the Indian Mints; in 1919 to the value of $950,000 and in 1920, up to about the middle of March, $950,000 worth. I am informed that during this period no 50 cent or dollar pieces were received from the Indian Mints. Even of this debased coinage I believe a considerable quantity found its way to the China coast being utilized there as currency in place of that of higher intrinsic value which disappeared into the melting pot. I do not describe these, as, except for the fact that they were of very low silver fineness, they appeared to be similar to the former Georgian coins of like denomination.

The following is a short account of some of the coins and tokens which have come under my notice:—

STRAITS SETTLEMENTS.

1. One cent: minted at the Calcutta Royal Mint: made of bronze: a square shaped coin with rounded corners: size across 21.3 mm. Plain edge.

Obv. Crowned head and bust of King George to left; a dot below: legend on left, above and right " GEORGE V KING AND EMPEROR OF INDIA.

Rev. Within an interior beaded circle the figure "1" over the word " CENT ": outside this circle and within another similar circle the legend " STRAITS SETTLEMENTS (rosace) 1920 (rosace)." [Pl. II. figs. 8 and 9.] Up to the 22nd September, 1920 there had been received in the Straits Settlements Treasury, cents of this type to the value of $576,650.

2. Five cents: made of nickel: circular diameter 20 mm.: plain edge.

Obv. Crowned head and bust of King George to left. Legend around " GEORGE KING AND EMPEROR OF INDIA." [Pl. II. figs. 10 and 11].

Rev. Within a beaded interior circle the figure " 5 ": around and outside the circle the legend " STRAITS SETTLEMENTS," above; and, below, " FIVE CENTS 1920."

I received specimens of this coin in January, 1921. These coins were struck at both the Calcutta and Bombay Mints: the coins first issued for circulation (and the one above described) emanated from the latter; none having been despatched from the former Mint by January 24th, 1921. I am indebted for this information to the Authorities at His Majesty's Mint, Calcutta.

SINGAPORE.

In August, 1920, I heard that the Singapore Harbour Board had issued tokens for use within their very extensive premises covering the long line of docks which serve the Port. The result of my enquiries was that the Chairman very kindly gave me specimens of the denominations then in use and in January, 1921, was good enough to let me have examples of a new issue. These may be described thus:—

First issue.

1. One cent: made of tin: diameter 34 mm.: a circular coin punched on one side only, the other side being plain. [Pl. II. fig. 12].

Obv. Within a small central circle the figure " 1 "; outside and within another circle the letters " S H B." These letters are the initial letters of the Singapore Harbour Board.

Rev. Plain.

2. Half-cent: made of tin: diameter 24 mm.: a circular coin punched on one side only, the other side being plain. [Pl. II. fig. 13].

Obv. Within a small central circle the figures "½"; outside and within another circle the letters "S H B."

Rev. Plain.

Second issue.

3. One cent: made of tin: diameter 28.5 mm.; a circular coin punched on one side only, the other side being plain. [Pl. III. fig. 14].

Obv. Within a garter, the arms of the Singapore Harbour Board consisting of a lion "passant" to left standing on a castle, the whole surmounting a diamond shaped lozenge enclosing a three-armed ornament each arm containing a crown. On the left is a large figure "1" and on the right the word in small lettering "cent." Around and within the riband of the garter the legend "THE SINGAPORE HARBOUR BOARD."

Rev. Plain.

4. Half-cent: similar to the One cent but smaller: diameter 26 mm. The only difference is that the figures "½" replace the figure "1." [Pl. III. fig. 15].

5. Quarter cent: similar to the half-cent but smaller: diameter 22.5 mm. The figures "¼" replace the figures "½." [Pl. III. fig. 16].

I am informed that the punches from which the first issue was struck were made locally at Singapore and the tokens struck locally. They are somewhat rough productions.

For the second issue, however, the dies or punches were manufactured at the Royal Mint at Bangkok, Siam, and are of a high standard of excellence: the tokens for current use were, I understand, struck locally at Singapore and, whether from the use of insufficient pressure, hasty work or other cause, the impression produced does not bring out all the detail of the design in those which I have examined: for example, the impression of the diamond-shaped lozenge is very faint; whilst of the three armed ornament and the three crowns there is hardly any trace. On the other hand I have seen proofs of No. 3 in copper and in some white metal which, carefully and properly struck, show every detail perfectly. I therefore add these proofs to the list.

6. Proof in copper of No. 3: fine work.

7. Proof in hard white metal of No. 3: fine work.

These tokens can hardly be regarded as currency even in a restricted area as they are strictly only intended to be used for the purpose of immediate payment to coolies (by way of tallies really) for services such as carrying baskets of coal or parcels of merchandise to and from ships: the tokens are redeemable at depôts on the premises of the Singapore Harbour Board for ordinary coinage or notes current in British Malaya. I was informed that they were not issued under any Government authority.

PULAU BUKOM.

In August, 1920 I was asked by the world-wide known numismatist Mr. J. P. Moquette if I had heard of an issue of tokens from this place: a small island lying about seven miles from Singapore. It is British territory and there is situated an important oil depôt of the Asiatic Petroleum Company.

I made enquiries from the Manager of the Company who very courteously sent me specimens of the tokens which the Company had issued for Island use. I subsequently had the opportunity of seeing several more examples. The following is a description.

1. One cent: made of tin: diameter 29 mm.; a circular coin punched on one side only; the other side being plain. [Pl. V. fig. 17].

Obv. Within a small central circle the figure "1": outside and within another another circle the letters "P. Bukom." The letter "P" stands for the word "Pulau" which is Malay for "Island."

Rev. Plain.

2. Half cent: made of tin: diameter 19 mm.: a circular coin punched on one side only; the other side being plain. [Pl. V. fig. 18].

Obv. Within a small central circle the figures "½": outside and within another circle the letters "P. Bukom."

Rev. Plain.

I was informed that these tokens were not issued under any Government authority.

PULAU SAMBOE.

In the early part of 1920 my attention was drawn to some tokens apparently emanating from this Island which is a Dutch possession situated about ten miles from Singapore. Large oil depôts are maintained at this place. I accordingly wrote in April of that year to the Official in charge of the Island asking for information about the issue. I received an obliging reply the interesting portion of which reads:—

"Owing to the shortage of copper coins, I was compelled to introduce tokens at this place because a lot of work done by coolies here is paid cash on the spot.

"The token has therefore no value as "currency" but a token represents the value of one Straits Settlements cent; and these tokens can only be used on the Island of Pulo Samboe and then only for the Companies' business."

Mr. Moquette kindly informed me in August, 1920 that the Dutch Government had already, by that date, forbidden the further use of these tokens. I had, however, the opportunity of examining about thirty: the following account gives a short description of them.

1. One cent: made of tin: diameter 29 mm.: a circular coin punched on one side only, the other side being plain. [Pl. V. fig. 19].

Obv. Within a small central circle the figure "1"; outside and within another circle the letters "P. SAMBOE." The letter "P" stands for the word "Pulau" which is Malay for "Island."

Rev. Plain.

2. One cent: similar to No. 1, but the letter "O" is stamped "Ɔ": this is not an uncommon variety and I think was the first issue; the punch being later perfected. [Pl. V. fig. 20].

3. Half cent: made of tin: diameter 22.5 mm.: a circular coin punched on one side only, the other side being plain. [Pl. V. fig. 21].

Obv. Within a thick raised circle the letter "S" which is the initial letter of "Samboe."

Rev. Plain.

TRENGGANU.

The ordinary issue of "white" or pewter cents by the State of Trengganu is well known. In September, 1920, however, a new issue appeared which is of considerable interest. They differ considerably from the earlier issues. The following is a description of the new coin of which, through the kindness of the British Adviser, I have received specimens.

1. One cent: struck at Trengganu: made of pewter: circular: diameter 28.8 mm.: milled edge. [Pl. V. figs. 22 and 23].

Obv. Within a diamond-shaped figure, the figure "1" flanked by a six-pointed star on each side: the whole within an interior beaded circle: around, and within an exterior beaded circle, a wreath of leaves.

Rev. Within an interior beaded circle in Malay "Kerajaan Trengganu Sanah 1325" (i.e. "State of Trengganu Year 1325"). Outside, and within an exterior circle, in Malay character "S. Z. A." (i.e. the initial letters of Sultan Zenal Abidin) each letter separated from the other by a six-pointed star.

The points of interest with regard to this coin are:—

(*a*) Sultan Zenal Abidin died in 1918 and was succeeded by a son who abdicated in 1920 and in turn was succeeded by another son of the deceased Sultan. Owing to the great shortage of small currency in the State (where silver and copper coinage of the Straits Settlements are current as well as the local pewter coinage) a new issue of coinage became urgently necessary. There was no time to order a new " die " from Europe and the old die (modified slightly on the Obverse) was used.

(*b*) The modification consists in the addition (cut into the old die) of the diamond shaped figure surrounding and the two stars flanking the figure " 1." The old Hegira date 1325 (i.e. 1906-7) is retained though the coins were issued only in 1920: so too are the initials of the Sultan who died in 1918.

(*c*) The main reason why any modification was really necessary was because owing to the high price of tin these " white " or pewter cents were issued as equal to Straits Settlements copper or " red " cents whereas 400 of the *old* Trengganu cents only equalled in value 300 Straits copper cents.

(*d*) The alloy was prepared by the great Tin Smelting Company of Singapore, the Straits Trading Coy., Ltd. and is noticeably harder than the mixture used for earlier issues. The " die " itself is rather worn and the sheath or instrument used for cutting the blanks from the sheet metal is getting blunt and could not be properly repaired by the local Trengganu metal-workers: with the result that the edging of the coin is very poor and the general impression not very clear: though specimens vary.

(*e*) Ten thousand dollars worth of these coins were to be issued. The issue was authorized by the High Commissioner.

NETHERLANDS INDIES.

Mr. Moquette of Weltevreden, Java, informed me in 1920 that in 1914, in consequence of shortage in copper currency, an issue of Tin coins representing values of 5 and 10 cents was contemplated. Dies were prepared at the Opium Factory at Batavia but, as the scarcity of coinage was within a short time made good by a supply from Holland, the projected issue of coins was never made.

The die for the 10 cent piece was destroyed and the specimens struck from it were, with the exception of one example produced after the die had already been damaged and now in the Batavia Museum, melted down. The die for the 5 cent piece was however preserved and is in the same Museum together with a few specimens struck from it. The following is a short description of these extremely rare proofs :—

1. Ten cents: struck at Batavia, Java: made of tin with a little lead: circular: size 27 mm. Plain edge. Description from a plaster cast. [Pl. V. figs. 24 and 25].

Obv. A Crown surmounting "10 Ct.": below, the words "NEDERLANDSCH INDIE" in two lines. There are two flaws in the die.

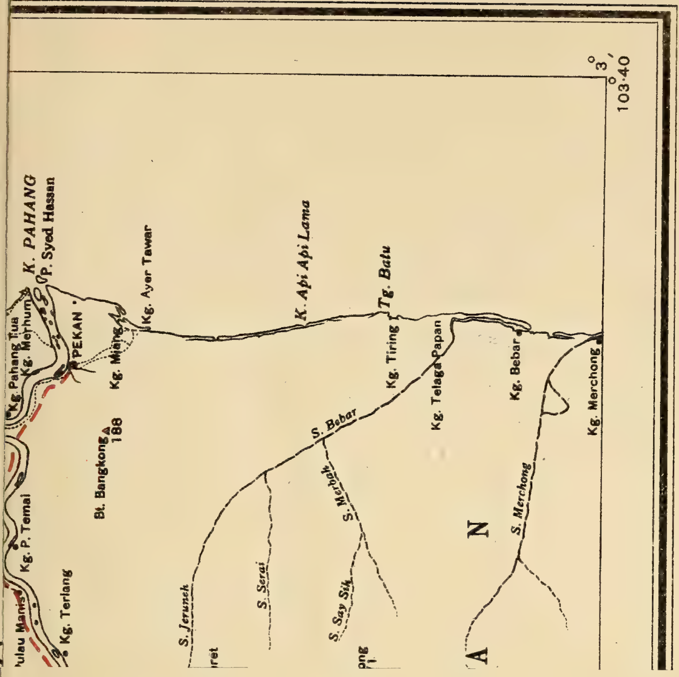
Rev. In the centre, within a scroll work border, the date "1914." Above in Javanese character and below in Malay "One-tenth part of a guilder."

2. Five cents: struck at Batavia, Java: made of tin with a little lead: circular: size 26.5 mm. Plain edge: a thick coin of 3 mm. Description from a specimen given to me by Mr. Moquette. [Plate V. figs. 26 and 27].

Obv. Within a beaded circle a Crown surmounting "5 Ct." Outside and above, the word "NEDERLANDSCH" and below "INDIE." To left the mint-mark of a sea-horse (the conventional mark of the Dutch mint-master Dr. C. Hoitsema); to right a caduceus (the conventional marque d'atelier of Utrecht).

Rev. Within a beaded circle in Malay "One twentieth part of a guilder": outside and around, the same in Javanese character, and at foot "1914."

* * *


K. PAHANG
P. Syed Hassan
Kg. Pahang Tua
Kg. Merhum
PEKAN
Kg. Miang
Kg. Ayer Tawar
Kg. P. Temai
Pulau Manis
Kg. Terlang
Bt. Bangkong
188
K. Api Api Lama
Tg. Batu
Kg. Tiring
Kg. Telaga Papan
S. Bebar
Kg. Bebar
Kg. Merchong
S. Merchong
S. Jeruneh
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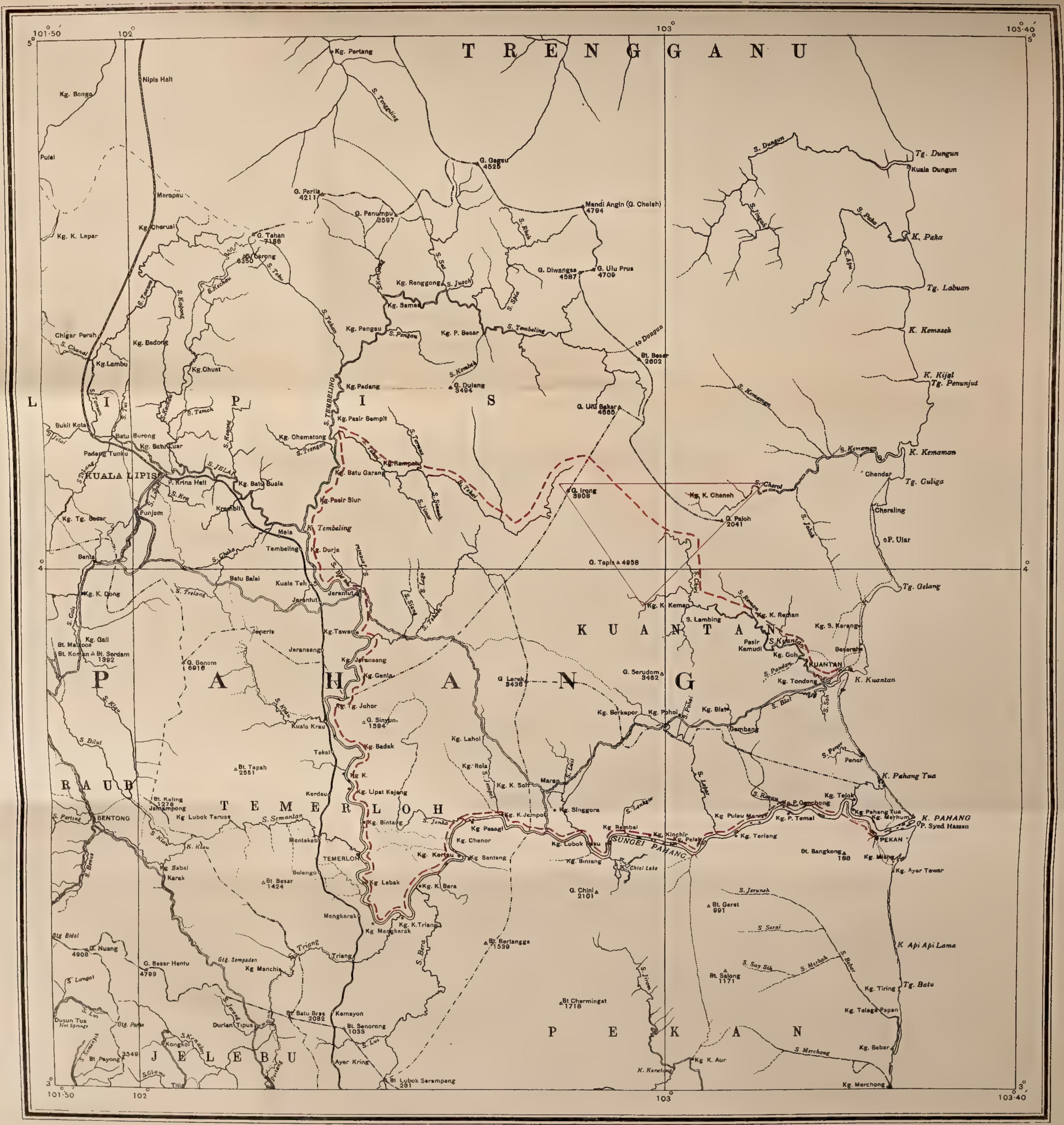
SKETCH MAP OF NORTHERN PAHANG


T R E N G G A N U
L I P I S
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101·50
102
103
103·40
5
4
3
Kg. Pertang
S. Tenggeling
G. Gagau 4525
Mandi Angin (G. Cheleh) 4794
G. Perlis 4211
G. Penumpu 3597
Nipis Halt
Kg. Bongo
Pulai
Merapau
Kg. K. Lepar
Kg. Cheruai
G. Tahan 7186
Carong 6350
S. Tahan
S. Kechau
S. Kepong
Kg. Renggong
S. Jusoh
Kg. Samau
G. Diwangsa 4587
G. Ulu Prus 4709
Kg. Pengau
S. Pengau
Kg. P. Besar
S. Tembeling
to Dungun
Bt. Besar 2602
Chigar Perah
S. Chanai
Kg. Lembu
Kg. Bedong
Kg. Chuai
Kg. Padang
G. Dulang 3494
S. Kembeh
S. TEMBELING
Kg. Pasir Sempit
G. Ulu Bakar 4666
S. Dungun
Tg. Dungun
Kuala Dungun
K. Paka
S. Paka
Tg. Labuan
K. Kemaseh
K. Kijal
Tg. Penunjut
S. Kemaman
K. Kemaman
Chendar
Tg. Guliga
Cheraling
P. Ular
Tg. Gelang
Bukit Kota
S. Jelai
Batu Burong
Padang Tunku
Kg. Batu Luar
S. JELAI
KUALA LIPIS
P. Krina Halt
Kg. Batu Buala
Kg. Chematong
S. Trengan
Kg. Rampah
S. Tekai
Kg. Batu Garam
Kg. Pasir Siur
K. Tembeling
Punjom
Kg. Tg. Besar
Krambit
Mela
Tembeling
Kg. Durja
Benta
S. Cheka
G. Irong 3908
Kg. K. Cheneh
S. Cherol
G. Paloh 2041
G. Tapis 4956
S. Tabak
Batu Balai
Kuala Teh
Jerantut
S. Trelang
Kg. K. Dong
Jeneris
Kg. Tawar
Kg. K. Keman
S. Lembing
S. Reman
Kg. K. Reman
Kg. S. Karang
Pasir Kamudi
S. Kuantan
Kg. Goh
Beserah
KUANTAN
K. Kuantan
Kg. Tondong
S. Pandan
Kg. Gali
Bt. Malacca
Bt. Koman
Bt. Serdam 1992
G. Benom 6916
Jeransang
Kg. Jeransang
Kg. Genta
G. Lerak 3436
G. Serudom 3462
S. Krau
Kg. Tg. Johor
G. Sinyum 1594
Kuala Krau
Kg. Berkapor
Kg. Pohol
Kg. Blat
S. Blat
Gambang
Kg. Badak
Kg. Lahol
Kg. Rola
Tekal
S. Bilut
Bt. Tapah 2551
Kg. K.
Kg. Lipat Kajang
Kerdau
Kg. K. Soi
Maran
S. Lepar
S. Penor
Penor
K. Pahang Tua
S. Rayan
Kg. Tejok
Kg. P. Gamchong
Kg. Pahang Tua
Kg. Pulau Manis
Kg. P. Temai
Kg. Meyhum
K. PAHANG
P. Syed Hassan
PEKAN
Bt. Kaling 1276
Jamampong
Kg. Lubok Terusa
S. Pertang
BENTONG
S. Semantan
Kg. Bintang
S. Jenka
Kg. K. Jempol
Kg. Pesagi
Kg. Singgora
Kg. Rambai
Kg. Kinchir
Kg. Pelak
Kg. Teriang
Bt. Bangkong 186
Kg. Ayer Tawar
Mentakab
TEMERLOH
Kg. Chenor
Kg. Lubok Paku
SUNGEI PAHANG
Kg. Bintang
Chini Lake
Kg. Kertau
Kg. Sentang
Kg. Sabai
Karak
Belengo
Bt. Besar 1424
Kg. Lebak
Kg. K. Bera
G. Chini 2101
S. Jeruneh
Bt. Geret 991
Mengkarak
Kg. K. Triang
Kg. Mengkarak
S. Serai
S. Bera
Bt. Bertangga 1539
K. Api Api Lama
Gg. Bidai
4908
G. Nuang
G. Besar Hantu 4799
Gg. Sempadan
Kg. Manchis
Triang
S. Triang
S. Saa Sik
S. Merbok
S. Bebar
Bt. Salong 1171
S. Jiram
Kg. Tiring
Tg. Batu
Bt. Cherminget 1718
Kg. Telaga Papan
Dusun Tua Hot Springs
Gg. Pelas
Durian Tipus
Batu Bras 2082
Kemayon
Bt. Senorong 1033
Kongkol
Bt. Payong
3349
Ayer Kring
Bt. Lubok Serampang 281
K. Keratong
Kg. K. Aur
S. Merchong
Kg. Bebar
Kg. Merchong
Titi

Scale 12 Miles to an Inch

Miles 10 5 0 10 20 30 Miles

Through an unknown Corner of Pahang with H. Clifford in 1897.

By F. W. Douglas.

A portion of the map on the border between the States of Pahang and Trengganu is still blank. It lies in a rough triangle, of which Gunong Irong, the source of the Tekal and Tembeling rivers (both northern branches of the great Pahang river), is the western apex, with Gunong Tapis, the source of the Kuantan River, the south-eastern point, and the mountainous range at the head of the Kemaman River, which flows in an easterly direction through the southern end of Trengganu, as the north-eastern point.

This area is still a *terra incognita.* It has occurred to me therefore that the following notes from an old diary may possibly be of interest and perhaps serve to stimulate some member of this Society to explore this region thoroughly. The triangle is marked on the accompanying map.

In 1897, Hugh Clifford (now Governor of Nigeria), who was then Resident of Pahang wanted to make a bridle-path connecting Kuantan, which lies on the east coast at the mouth of the Kuantan River, with Kuala Lipis, which lies some 200 miles inland up the Pahang River and which had then been selected as the temporary Capital for the State of Pahang. He and I accordingly set out from Kuantan on the 12th April, proceeding up the Kuantan River to its source, across the *terra incognita* and down the Tekal River and thence on down the great Pahang River to Pekan at the mouth.

We reached there on the 23rd April. Our journey therefore took 12 days, during which we travelled some 300 miles almost entirely by river. The following notes are taken from a diary kept during the trip.

1st April. Clifford wrote asking me to get guides for the journey, as no one had ever done the trip from the Ulu Pahang side. The only men I could find were not exactly ideal for the purpose. One was an opium-smoking waster, Bakar Tekal by name, who had been in the Ulu Tekal with gĕtah-hunting Dayaks, but who had not been down the river; the other was one Komeng Liar, half Sakai, who had been the guide for a party of raiders in 1896 from Kemaman (Trengganu) into Pahang and had helped some of Bahman, the Orang Kaya Semantan's people, to escape. He was selected for our party simply as a useful man in the jungle.

8TH APRIL. Clifford walked over from Pekan and we started up river, spending Sunday, the 11th, at the Pahang Corporation's mine. The old mill at Jeram Batang was running for the last time prior to being moved to Sungai Lembing, where all the stamps were being concentrated. Derrick, the superintendent, entertained us royally. He took Clifford over Nicholson's & Willink's lodes and down the shaft. (Both these lodes are worked to this day).

12TH APRIL. We continued upstream in four dug-outs with 20 men. Slept on the Cheras. Clifford's boat filled during the night and he awoke in the water.

13TH APRIL. Stopped at a Sakai village, where we tried to get two men to join our party. Clifford fired off his best Senoi at them but they only bolted. Eventually, after an hour we caught two, named Chong and Bo'uk, whom we bribed with much tobacco to accompany us. These Kuantan Sakai have a peculiar way of making their blow-pipes. They split a piece of wood, bore out the half-sections and then bind the two pieces together with rotan and a covering of gutta-percha. The Patagonians of South America do the same, but I know of no other native tribes in this part of the world who make their blow-pipes in this way. Later they came down to my house and gave a very good exhibition of shooting amongst my cook's fowls, and gave me a blow-pipe which is now in the British Museum.

We camped at Kuala Lipas that night and distributed the loads preparatory to walking next day. The worst of a rice-eating race is that they eat practically as much as they can carry. We therefore had to arrange to drop some of the men at the end of the second day's walk and most of the remainder as soon as we got far enough down the Tekal, or one of its tributaries, to raft.

Clifford was a Spartan in his methods of travelling. He arranged that we should live on curry and rice, tea and biscuits. Four chickens were allowed for curry; when they were finished, salt fish brought for the men was to be the only appetiser for the rice. I smuggled in a small flask of brandy—as my mother had made me promise never to travel without it,—two tins of sardines and two of cocoa and milk. I may add that my Spartan companion was not above sharing these rare delicacies! Perhaps the most trying part, until one grew accustomed to it, was that the rice was cooked overnight, so a meal of cold rice confronted one at 6 a.m. and another at noon. We indulged in a hot meal only at night. However at the end of the trip we were all as fit as the proverbial flea.

14TH APRIL. Started walking up the valley of the Senandok, our "path" being the bed of the stream. The leeches were frightful. I had torn my breeches above the knee, an accident of which these jungle pests took full advantage; I removed 15 leeches from my legs. After ten o'clock our route took us up a very sharp incline and we had to pull ourselves up by roots. Some hornets (*pĕnyĕngat*) attacked us and caused a stampede. One found Clifford's nose and in a few minutes it was like a full-blown rose.

At 11.30 we reached the summit of Bukit Lada, which forms the divide between the Pertang on the Pahang side and the ulu Kemaman of Trengganu. According to the aneroid the altitude was only 700 ft., but judging by our exertions I suggested that some correction was required. We then descended the other side to the Sungai Besar and on lower again to the Sungai Babi, which in turn brought us to the Sungai Pertang, where we camped for the night. It is a fair sized stream; but we were above the bamboo country and so could not make rafts.

15th April. The path became a game track about five feet high through the jungle, following the course of the river down. We crossed and recrossed it no less than twenty-three times; by the afternoon the water was waist high; it was rather chilly work and still more so when it started to rain. We therefore stopped to camp.

To get the palm leaf (bertan) collected and made into an atap as quickly as possible we had a competition, the Kuantan Malays and the Sakai versus Clifford's servant from Pekan and mine, a Malay from Perak. The latter won easily. (I heard recently that this Perak Malay rose to be a District Officer under the Siamese in Kelantan, where eventually he died). We were cold and wet until Clifford remembered that it was the anniversary of his wedding-day and we sampled the brandy.

We found bamboos a little way below us, with which we made our rafts. Wan Ismail and all our men except six were then sent home early next morning by the way we had come.

16th April. Rafting down the river was a very pleasant change. The Pertang is a beautiful river with great deep pools, in which shafts of slate protrude, huge *ngram* trees overhanging the water. Our troubles however soon began. We struck a log-jam consisting of great trees piled twenty feet high and some hundred feet long, brought down by floods. Most of them seemed to have been there some time. The rock in the river here seemed to be granite (possibly Tembiling schist). The rafts had to be dragged over this; many bamboos were split in the process and had to be replaced. Just below we came to the Tekal River and we camped for the night at the junction of the two rivers.

17th April. The Tekal was a fine stream here, made the more imposing by a big rapid known as the "Jeram Jerami." This gave me my first taste of shooting rapids, and an exciting game it is too, when no one with you knows the rapids! This particular rapid ended in a steepish drop, which tilted the rafts almost upon end. However we negotiated it successfully. As we floated on down stream, we passed some *sambhur* (*Rusa*) drinking at the water's edge; they never moved as we went by—a sure sign that no human beings lived anywhere near.

We shot several rapids without mishap during the morning and were becoming fairly confident of our skill (or luck) in this somewhat thrilling pastime. A bad rapid, known as Jeram Tahan Badak, however, proved our undoing. There appeared to be a kink in this as we could not see the end. Clifford led, each raft following at a few minutes' interval. The rush of water was terrific. As we swept round the corner, we saw Clifford and his raft high up on a rock; he and his party frantically gesticulated to us to keep to the left; S'man my leader, drove his pole in hard in front of my raft, but to no purpose; the raft was on it at once and out he shot; he came out bobbing in front of us, while we swept on towards Clifford. I just managed to haul him up as we crashed on to the rock. We could do nothing to stop the third raft from the same fate. When we took stock we found we could make two whole rafts out of our bamboos, but, worst luck of all, we had lost our only remaining fowl—a white one, which we had carefully kept for the last.

18TH APRIL. (*Easter Day*).—Floated on down stream all day. Lost our cooked food at a rapid. The rafts became so knocked about they would scarcely float. There were no bamboos available for mending them, but we managed to patch one with a small *meranti* tree. Slept the night at Kuala Som.

19TH APRIL. We started early, getting along fairly well until we came to another bad rapid, Jeram Mena. Here Clifford came to grief. He and his raft upset; he lost everything except his cork mattress; all the rice was spoilt. We managed, however, to put together a small raft out of the wreck, on which we sent on two men to try and find the boat, which Owen, the District Officer at Kuala Tembiling, had undertaken to send up the river to meet us.

The rest of us spent some time diving to try and recover Clifford's revolver etc., but a wonderful rainbow appeared, with one end touching the place where all the things were sunk; the Malays thereupon ceased their efforts as they said the spooks had taken the things. It rained hard and we remained there cold and miserable.

20TH APRIL. Three dug-outs turned up at 8 a.m. and we pushed off on the final stage of our journey, glad to think that the end was in sight, but at the first rapid we all upset. At Kuala Tekal, where the Tekal joins the Tembiling River we found our boat. Further on down, at Kuala Tembiling, Duff and Owen were waiting for us at the house of Panglima Kakap, together with a huge curry. Scent had been sprinkled liberally over plate, spoon and fork, but our hunger made light of such trifles.

We left at ten that night following the great Pahang River down to Pekan, the Government station and residence of the Sultan, near the mouth, arriving there at 3 a.m. on the 23rd April.

All our time and compass survey records were lost and so far as I know, no one has been through that way since; that corner of the map therefore remains blank to this day. We established however the fact that the Tekal and the Tembiling Rivers rise from the same hill, although the latter runs north and then bends west before it finally runs south parallel to the Tekal.

We were particularly unlucky in finding the water in the Tekal at such a level as to make the rapids most difficult. It was my first real jungle trip. One learnt a great deal from Clifford, under whose guidance one realised what cheery companions Malays can be under such circumstances.

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A Contribution to the Psychology of "Latah."

David J. Galloway m.d., f.r.c.p.

The attraction which attaches to an obscure subject and a long and close association with Malay races must jointly form the reason, if not the excuse, for this paper.

Whatever may be the etymological origin of the word "latah," it is now specialised to mean a peculiar form of nervous manifestation which occurs among many races and is common among Malays.

This manifestation lends itself to a differentiation into several varieties, all having one symptom in common, a greatly enhanced susceptibility to suggestion from without, whether conveyed through visual, auditory or tactile channels.

References to "latah" in the literature of Malaya are many and several special papers have been written on the subject in various journals.

I propose to avail myself of some of the published matter, more in the way of illustration than in any other, and to supplement my own cases. For that purpose I have selected those described by the late Mr. O'Brien and which were published in Nos. 11 and 12 of this Journal, chiefly because they are described with a careful minuteness which could be achieved only by one who had had a long and close association, and was in close sympathy with the Malays of the Peninsula, and because with that accuracy of observation which characterised the man, he has portrayed one of each of the three great classes into which "latah" is susceptible of division from a psychological standpoint. While availing myself of his description I am unable to adopt his classification.

There are several preliminary considerations to be dealt with such as the influence of race, age, sex, and heredity, but I shall discuss them very briefly.

Race is an important factor, for, although I have seen instances of "latah" among Abyssinians and Portuguese half-castes, it is mostly found among the Malay races. I have not met an instance of true "latah" among Chinese, though the mimeses have been many and were usually the outcome of "la grande simulatrice" Hysteria.

The student of ethnology will meet with some difficulty in assessing the racial limits of "latah." Unfortunately, some writers on the subject have invested it with a semi-religious significance which has led to its being confused with conditions of religious ecstasy or others with the hysteria which seems to be inseparable from religious revivals in civilised countries. The only approach to anything of a "religious" nature is the Indian "fakir" in whom the state of abstraction, which plays so large a part in the production of "latah" has passed beyond physiological limits and become an auto-hypnosis.

If he excludes all such manifestations, he will still find that "latah" is to be found in quite a number of races and that these are all situated within the tropical or sub-tropical belt, and are all more or less in the infancy of civilisation. Reduced to first causes, there would be nothing ridiculous in a theory that "latah" was the product of an environment in which constant warmth, absence of hurry, abundant leisure and an unoccupied mind were the components.

Sex has also a bearing on the subject, in that two of the types of "latah" are more common in women than in men. It is also curious that "latah" in men seems to be of greater intensity, and has a greater tendency to pass into action, than in women.

Age also plays its part, as "latah," being of gradual growth, is rarely seen before middle age excepting in one type, that which I describe as the "obsession of fear," which has its origin in childhood.

It is undoubted that "latah" in some mysterious way clings around some families, and this is what has afforded some ground for the statement found in nearly every definition of the term, that "latah" is hereditary. One does not realise the difficulty there is in obtaining a clear family history among Malays until it has been tried. It would have been in the highest degree profitable to follow history into the next generation and its collaterals, but this I found impossible because of the rapidity and completeness with which the average Malay family of the common class breaks up, each going his own way.

I append the histories of four families which may throw some light on this aspect of the question.

FAMILY I MALAY:—

Father, a shiftless individual, genial and effusive but totally unable to follow any continuous occupation—a typical degenerate.

Mother, healthy

Son, intensely "latah"

Daughter, jumpy and hysterical.

FAMILY II MALAY:—

Father, very "latah"

Mother, healthy

Eldest son, a "paroxysmal" drunkard, although a Mohammedan.

Eldest daughter, distinctly although as yet slightly "latah"

Second daughter, epileptic

Other members of the family too young to decide.

FAMILY III MALACCA PORTUGUESE:—

Father, healthy

Mother, "latah"

Family of three daughters and two sons. One of the daughters is a somnambulist, the eldest son is "latah," the second son slightly so, the other members of the family healthy.

FAMILY IV MALAY:—

Father, slightly "latah"

Father's sister (living with the family) intensely "latah"

Mother, healthy

A very large family of which one son, the eldest of the family, shews distinct signs of "latah," one daughter also, while the "Benjamin" of the family is a congenital idiot.

I therefore do not feel that it is justifiable to say that "latah" begets "latah," or, in other words, to dub it as being hereditary. What is inherited is the impress of a nervous defect, a disequilibriation, which may manifest itself as "latah" or some other neurosis, the early environmental associations and the unconscious mimicry of youth being of at least equal importance as etiological factors.

While the Malay cannot justly be called a jungle dweller, in a crowded town he is an exotic. Of an eminently social disposition he never, of his own free will, chooses solitude but prefers the village life. The bounty of Nature is such that a few hours' work daily suffices to supply his wants and the unvarying and unfailing rotation of the seasons relieves him of the necessity of laying up any store against the future. There has thus been evolved a contented, happy, somewhat improvident individual, of abundant leisure, on the whole a loveable personality. In the company of his compeers he is a cheery conversationalist or raconteur, in the society of his superiors he, under a mask of deferential passivity, hides an acutely sentient nature, keen to appreciate humour, sensitive to praise or blame, responsive in a high degree to the moods of his visitor, is, in short, in perfect "rapport" with him.

But when alone, much of his leisure is spent in day-dreaming or abstraction, really a subconscious state. It is difficult to conceive more favourable conditions for such a state than in a quiet village, with its warmth, its stillness and the absence of any disturbing element. So long as these moods of abstraction are intermittent and occasional, they are quite within the normal limit but when they are prolonged, as in the "fakir," they pass that limit and may then be looked on as an auto-hypnosis, or in any case, a hypnoidal state.

The condition of abstraction is difficult of comprehension by the twentieth century mind which has little opportunity for any but conscious thought, but it is a well recognised state in psychology. It is a temporary dissociation of conscious thought, during which we sink into the subconscious, and most people are aware of such a state, although they probably cannot define it. It is the " shadowy representation " of Kant, the " perceptions insensibles " of Liebnitz, the " subconscious " of Myer, the " unconscious " of Freud, the " subliminal " of Yung, and it has been defined as " the sum of all psychical processes which do not reach the level of consciousness." To illustrate my meaning is a little difficult. There are a considerable series of thoughts and memories which it is impossible to recall by any effort of volition, but which are readily brought into consciousness when a suitable stimulus, usually in the form of a similar association, presents itself. Thus it is, possibly within the experience of most, that some train of events arises which causes us to remark, " I have been through all this before, but when or where I do not recollect," the fact being that a similar train of events had been experienced and been registered in the subconscious, and it required the stimulus of a similar train to bring the recollection within the grasp of the conscious mind.

The question arises " What has this to do with " latah " ?

In the condition of abstraction (i.e. when the subconscious holds sway) so indulged in by the country Malay, the individual is readily influenced by suggestions or stimuli, and suggestions or stimuli which would be rejected by the conscious mind would exert their full influence, and, following the usual rule, their passage would, by repetition, become more rapid and easy. The subconscious, even in the educated, is but little removed from the reflex or automatic, and a further factor in the equation is that we are dealing with a primitive mind, in which many of the processes are reflex or instinctive and have not yet, or only recently, been subjected to the influence of education, the greater part of which consists in the development of the power of inhibition of our primary instincts and their adjustment to the surroundings. So far, I have been dealing with the predisposing factors to the " latah " state but the determining factor, the " X " in the equation, is the neuropathic inheritance or, what I believe to be of equal potency, early neuropathic association.

From a study of the material at my disposal I have divided "latah" into three types, all having one feature in common, a greatly enhanced susceptibility to suggestion from without, but the manner in which a suggestion may radiate differs in each.

TYPE I CLASS I—-A Malay gentleman, 40 years of age, "latah" for many years. He is a man of considerable attainments and can discuss any contemporary subject with analytical keenness. I experimented with him by his permission. Suddenly, in the midst of ordinary conversation, I shouted out the word "Strike," accompanying it by a corresponding action. He immediately repeated the word and launched out at the nearest person, who happened to be a visitor like myself. The act of striking was immediately followed by another, a purposive act, as if to grasp and take back the previous action and this was accompanied by an apologetic expression of countenance and also of speech.

After a time I repeat, unexpectedly, the order. Again he responds so far as repeating the word, but no action results. A third time I attempt to catch him but this time neither response to word or act is elicited.

Another instructive example of this type is that of an Abyssinian who is the chief tracker to a well-known big game hunter. In his times of leisure, when it may be reasonably assumed that he is in a more or less abstracted mood, the slightest stimulus, either as a sudden noise or abrupt action, will send him into "latah" action, but while he is tracking, an elephant gun may be fired over his head without causing any disturbance of his equanimity.

CLASS II—To this class belongs the well-known "latah mulut," recognised by the Malays themselves as one of the mildest types of "latah." The subject is, almost invariably, a woman at or over middle age. In the early days of the bicycle, while it was still more or less a novelty, it was a common occurrence to witness instances of this class in the street. A bicycle coming up noiselessly from behind would flash past a Malay woman, the subject of "latah." At once she would stand rigidly still and, after a brief pause, begin to pour out a stream of language. The catalepsy, although of brief duration, is complete and she has often to be pulled aside to avert an accident. Soon the catalepsy passes off and she resumes her journey, still talking. But the more usual occurrence, and the more instructive in that it enables the observer to follow the course of events, is on entering a room in which the affected person is. At the moment of entry there is a brief interval of tense silence, the "latah" drops whatever she may have been employed on, and the "language" begins. After a copious flow of speech, it is interrupted by an apologetic cough for a moment, and then goes on again. Gradually these interruptions become more frequent, their duration longer and the periods of talking correspondingly briefer, until she entirely regains control.

Class III—As illustrating this class I make use of O'Brien's description (No. 11 Straits Branch, R. A. S. Journal p. 150).

"A Malay woman of respectable position and exceedingly respectable age was introduced to me some time ago as a strong *latah* subject. I talked to her for at least ten minutes without perceiving anything abnormal in her conduct or conversation. Suddenly her introducer threw off his coat. To my horror, my venerable guest sprang to her feet and tore off her *kabayah*. My entreaties came too late to prevent her continuing the same course with the rest of her garments, and in thirty seconds from her seizure, the paroxysm seemed to be over. What struck me most in this unsavoury performance was the woman's wild rage against the perpetrator of this outrage. She kept on calling him an abandoned pig and imploring me to kill him, all the time she was reducing herself to a state of nudity."

There are several points in this type to be elucidated and I shall take the classes in order. Class I is very instructive and it gives the key to the explanation of all this type. Even in a state of expectation in which he undoubtedly was, as he had voluntarily submitted himself in the interests of science, he could be surprised into a "latah" act in its completeness. But note the action which followed. The arm was again rapidly extended with the hand open and the fingers in the prehensile position, as if to grasp and take something back, and this was accompanied by an apologetic expression, the picture of a delayed inhibition which had arrived too late to restrain the impulsion which generated the blow. This attempt established a condition of awareness which, on a second attempt being made, called up the inhibitory act in time to arrest the blow, though not the spoken command, and, on the third attempt, was in time to annul the impulsion altogether.

As to the "latah mulut," it is essentially similar. Each of the interruptions to the flow of speech is an attempt at inhibiting it, and it is interesting to watch them becoming more frequent and of longer duration, really to watch the controlling factors of the conscious mind gradually asserting themselves, until they assume dominance of the automatic, reflex or subconscious, accepting those terms as being in this connection synonymous. This also is an instance of delayed inhibition.

There remains yet to be explained the "language." The Malay term "latah mulut" is really intended to convey the meaning of a lapse of the mouth from reason, in contra-distinction to other types of "latah," where the lapse from reason is in the acts, and such an interpretation is justified, the language used being of such a nature as to deserve the term obscene, the one applied to it by almost every writer. We have to seek our explanation in the subconscious. The science of Psycho-analysis, based chiefly on the work of Yung and Freud, has shewn us that the subconscious is much more than merely a storehouse of memories of things which "we see but do not perceive." One of its many other functions is to receive material repressed from the conscious mind. In the course of our daily life we hear and see much which is utterly at variance with our sense of propriety or even decency but which, in any case, is not adjustable to the present standards of society. Our first and instinctive effort is to escape from the vicinity, but, if that is not possible, there is a second line of defence in that we can shut out from our minds the offending material or, to be strictly accurate, we can relegate it to the subconscious, where it would await an appropriate association or a sufficiently powerful impulsion to let it loose. It would not be illogical to argue that the more decorous the individual, the greater the amount of material repressed, and thus the richer the subconscious repertory.

In the present position of our knowledge of psychical processes there does not seem to be any other explanation of this contradictory complex possible. We have the initial shock which may be visual (the bicycle) or auditory (a command), followed by a momentary catalepsy which may be so brief as to escape notice, but which, being a hypnoidal state, suffices to let loose the subconscious. We see the repeated efforts to regain control gradually gaining power until, at length, the censorship of the conscious mind is re-established and the attack is at an end. Favre's description of this type is particularly apropos—"elles disent tout ce qui leur vient à la bouche."

Again in Class III we must analyse the procedure. She has the "latah" susceptibility to suggestion, by way of the senses, greatly exaggerated but her speech is directed, and with point, against the experimenter. The insanity (although I dislike using the term in relation to "latah") affects her acts only. A comparison with the cases next to be described will shew that this is not hypnotism and the exact grounds for excluding hypnotism are, that there is no loss of consciousness, there is no illusion of the senses and the return to normal is easy and spontaneous, but there remains, after the event, a humiliating knowledge of the exhibition they have afforded, and a justifiable grudge against the operator. It is an example of the power of inhibiting an impulse being totally lost.

Type II—I was introduced to a Malay woman of forty years of age "more or less," the mother of many children, who was stated to be very "latah." She was in a condition of intense nervousness which she was making obvious efforts to suppress, and which I attributed to her condition of expectation. Her pulse was very rapid and there was a fine muscular tremor. No initial stimulus was required, not even a raised tone of voice, and she began at once to repeat every word addressed to her in Malay as well as carrying out the action suggested. Words spoken in English were fairly well repeated but no action resulted unless they were accompanied by pantomime. A rolled-up handkerchief was presented to her as an orange, and she at once went through the pantomime of peeling it. A wooden stethoscope was put into her hands as being a bottle, and she drank from the "bottle" with evident relish when ordered to do so. Not to be prolix, the response to verbal suggestion was sometimes a little slow, but suggestion by action was instantly responded to. The visual route was evidently much more permeable than the auditory. When it was all over, she was trembling violently, although any suggestion of an exciting nature had been carefully avoided. She remembered nothing of what had passed.

I now avail myself of O'Brien's case (*op. cit.* p. 149) which he noticed at Kuala Jumpol, when crossing the Malay Peninsula in 1875—"met a young Malay who was of material assistance to our party in pulling our boat across a narrow watershed into the Thi Sureting. His comrades told me the man was *latah* but I could see nothing in his conduct or conversation which was not perfectly rational. Some twenty-four hours after making his acquaintance, one night we let off a signalling rocket for the amusement of those who had given us assistance (none of those present had ever seen a rocket before). I was preparing to fire a second rocket myself, when the *latah* pushed me violently aside, snatched the torch from my hand, fired the rocket, and fell down on his face making an unintelligible noise, to all appearance the expression of fear. I was somewhat startled, such rudeness and violence being quite foreign to the Malay character. When I sought an explanation from the bystanders, I was informed laconically "*latah, tuan.*"

"Next morning, when I met this man, I found him perfectly rational and perfectly respectful. I saw him standing alone on the bank as we put off down stream, and I waved my hand to him. To my surprise he began waving his hand frantically in return, and continued to do so till I lost him at the first bend of the stream. I had began to whistle an air. He also began whistling. His imitative faculty did not quite lead him to a reproduction of the tune, but the fact of an up-country Malay whistling at all is sufficiently remarkable. As I rounded the bend, I saw him still waving and heard him still whistling. The steersman to whom I turned, came out with the stereotyped formula "*dia banyak latah, tuan.* I hope my poor friend's exertions ceased when their exciting cause passed out of sight."

The difference between the instances just described and those of Type I must be evident to all, those of Type II being due to hypnotism pure and simple. There is nothing in the case of the woman calling for comment, but a review of O'Brien's case is very instructive. We have the appearance of a white man, of remarkable personality, in a locality where such visits were rare. His every act would be watched by the lad with absorbing interest and thus a condition of expectation aroused. Then comes the loud report of the firing of the rocket (a loud noise or a bright beam of light being a usual way of inducing a hypnosis) and the hypnosis was complete. If any doubt were possible, the whistling episode dispels it, the history of hypnotism being full of such examples (echolalia). There is one omission in O'Brien's narrative, he did not ascertain if the lad remembered anything of what had passed. I imagine he did not remember anything.

The intense nervousness which preceded the experiment in the case of the woman is present in all and has a threefold causation. First, dread of the coming hypnosis, especially if, in previous hypnoses, suggestions of an exciting nature have been made, secondly, from the hypnosis being made against their will, and thirdly, from the suggestion never having been done away with or determined before waking the patient. Thus the liability to suggestion gains force and eventually this class of " latah " becomes " as clay in the hands of the potter."

I pass now to the third type of " latah " to which I have given the name of the "obsession of fear." In describing Type I, I mentioned the case of a big game tracker and I used him then to illustrate the marked inhibitory influence which a mental attitude of preparedness had on " latah " impulsion. But he was also the subject of the obsession now being described and, if the word for tiger was mentioned, would quietly slip away and lock himself in his room. While out in the jungle, at work, he would spend days and nights in close proximity to the wild beasts mentioned and know no fear.

Again let me quote O'Brien's description (*op. cit.* p. 147)—

" I have more than once met with river boatmen who, when the word *buaya* (alligator) was mentioned, even in the course of casual conversation after camping for the night, would drop whatever they might have in their hands and retire cowering to the cover of the nearest *kajang*. I have enquired into every case of this description which came under my notice, and in no case could I learn that the man had any special reason for his terror in the way of a personal experience. His friends explained that he was *latah* and that to them explained everything. On one occasion, after a curious exhibition of this description, I shot an alligator on the bank next morning. The *latah* was, to my surprise, the first to approach the saurian. Against my earnest entreaties he proceeded to pull the creature about, and finally forced its mouth open with a piece of firewood. His persecutors, his fellow-boatmen, stood at a respectful distance. An hour afterwards, as he was poling up the river, one of the crew called out to this man *buaya*! He at once dropped his pole, gave vent to a most disgusting exclamation, and jumped into the river—an act which shewed that his morbid terror was quite unconnected with what might be supposed to be its exciting cause."

This type is peculiar in that it is found in early youth and is almost exclusively confined to males. It can, in fact, be traced back to school days. It is a curious fact that the names given by boys to boys hit off with absolute accuracy and brutal frankness some physical quality or mental trait which departs, it may be ever so little, from the norm. The point which I wish to emphasise is that there seems to be almost uncanny intuition in boys which enables them to put their finger on the "weak spot." They are thus not long in finding some one of their number who labours under a neuropathic defect, some particularly ticklish or sensitive boy, and on him is expended their experimentation. As I have repeatedly seen, a favourite method is for the experimenter to begin fondling some object, usually a school bag or piece of rattan or indeed anything, while pointedly bringing it to the notice of his victim, calling it by the name of some loathsome or dreaded animal, gradually working up to a climax, and inducing a condition of extreme terror.

In two of the instances which came under my notice I was able to ascertain that the boys had an actual percept of the animal named. But this is unusual, and when this illusion does occur, it is only temporary, as, following the rule that repeated stimulation of a particular nervous tract enhances its permeability, causing it to react to weakened stimuli, eventually the mere mention of the name is sufficient to call up this condition of terror. There is no concept of the animal formed but merely the image in the memory of a previous condition of intense fear. As on each occasion of the calling up of this mental state a strenuous effort was made to escape from the imaginary danger, the tendency in this type of "latah" is to pass at once into action.

I do not think there can be much doubt that "latah" is dying out and in contributing to this, education plays an altogether subordinate part. There is the obvious fact that little or nothing is being done in the way of educating Malay girls, who would form the mass of the sufferers in later life. Not much can be expected from that side of education which provides for the acquisition of knowledge, much more might be got from the disciplinary side of education in that it develops the powers of restraint, teaches the control of reflex or automatic acts, in short, develops the power of inhibition and creates a constant condition of preparedness.

The chief influence in the extinction of "latah" is the gradual hardening of the conditions of life, the increasing struggle for existence from steadily advancing social states, which leaves no leisure for abstraction or introspection and which affects male and female alike. "Latah" in town dwellers is unknown and a comparison of the country-bred Malay women and her self-possessed sister of the town shews the extent of the change which may be wrought by a change of environment in an individual or a generation.

MEDICAL NOTE.

The examination of a number of persons, the subjects of "latah," did not bring to light any single condition, pathological or otherwise which, by its frequency of occurrence, would entitle it to be ranked as an etiological factor. The cases examined ranged from those who were merely abnormally ticklish to those who responded to every suggestion however conveyed.

In all there was a great acceleration of the pulse rate at the beginning of the examination. This was undoubtedly due to the condition of "expectation" and, after they were satisfied that no experiments were in contemplatiom, rapidly subsided. There were two exceptions both middle-aged women who were goitrous and shewed the muscular tremors of that disease.

The reflexes, superficial and deep were in excess and Babinski was normal. A confusing intrusion was the finding the results of a peripheral neuritis shewn by a paraesthesia or anaesthesia of the hands and feet and a corresponding loss of the reflex. This condition was present in three of the women examined. Although the causes of a peripheral neuritis in this part of the world are many it was possible, from the fact that all three women were multiparae and from a careful analysis of their histories, to arrive at the conclusion that the neuritis was probably of puerperal origin, known to natives as "taipo."

There was a perceptible difference in the rapidity of the responses according to the route chosen to convey the suggestion, the tactile being easily first, the visual next and the auditory last.

Stigmata of Syphilis were surprisingly rare.

New or Noteworthy Bornean Plants.

(PART I.)

By Elmer D. Merrill

Director, Bureau of Science, Manila.

In January, 1918, I finished the manuscript of my "Bibliographic Enumeration of Bornean Plants" in which nearly 5000 species of flowering plants are recorded from Borneo, and which was recently published by this Society. In the interim comparatively little attention was given to the Bornean flora, merely such material being worked up as was submitted to me for identification by the Conservator of Forests at Sandakan.

Previous to my departure for the United States in 1920. co-operative arrangements were perfected between the Bureau of Science and the Forestry Service of British North Borneo, whereby it became possible to send Mr. Maximo Ramos. botanical collector of the Bureau of Science, to Sandakan for the purpose of prosecuting field work in botany in British North Borneo. Mr. Ramos devoted approximately three and one-half months to field work in the immediate vicinity of Sandakan, from September to December 1920. In this time he collected 827 numbers of flowering plants and ferns, for the most part with ample duplicate material. On my return to Manila in the early part of 1921, I commenced a study of this material, finding approximately 700 species represented in the collection, of which nearly 100 have been found to represent previously undescribed forms, including three new generic types. In addition to these new species, numerous previously described ones not hitherto known from Borneo are also represented in the collection. Considering the fact that the entire collection was made at low altitudes and in the immediate vicinity of Sandakan, the percentage of novelties is unusually high. It is merely an excellent illustration of how little we know regarding the Bornean flora.

The present paper is largely based on the material secured by Mr. Ramos in 1920 in British North Borneo, but various species are also described from material secured by other collectors both in British North Borneo and in Sandakan. Small collections made by Major J. C. Moulton in Upper Baram in 1914 and 1920 have yielded interesting novelties. In the present paper 104 species are described as new, while 58 previously described forms are recorded for the first time from Borneo. Three new genera are described, *Fissipetalum* of the Olacaceae, *Juppia* of the Menispermaceae, and *Woodiella* of the Anonaceae. The list of species common and confined to the Philippines and Borneo has been increased by *Dinochloa pubiramea* Gamble, *Mapania affinis* Merr., *Dioscorea flabellifolia* Prain & Burkill, *Phacelophrynium bracteosum* K. Schum., *Polyalthia dolichophylla* Merr., *Dehaasia triandra* Merr., *Evodia bintoco* Blanco, *Santiria samarensis* Merr., *Dichapetalum holopetalum* Merr., *Actephila dispersa* Merr., *Cleistanthus megacarpus* C. B. Rob., *Omphalea bracteata* Merr., *Iodes philippinensis* Merr., *Eugenia palawanensis* C. B. Rob., *Strychnos ignatii* Berg., and *Solanum epiphyticum* Merr. In addition to the three genera described as new, mentioned above, the following genera are hitherto unrecorded from Borneo: *Phacelophrynium, Illigera, Cnestis, Actephila, Iodes, Actinidia, Taraktogenos,* and *Clidemia.* Including the species described as new and those previously described forms now credited to Borneo for the first time, the present contribution (published in two parts) adds a total of 162 species to the list of those known from Borneo.

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* Journ. Straits Branch Roy. As. Soc. Special Number, pp. 1-637. September. 1921.

Bureau of Science Manila, P. I.
November 15, 1921.

PANDANACEAE.

Pandanus Linnaeus f.

Pandanus sandakanensis sp. nov. § *Rykia.*

Frutex circiter 3 m. altus; foliis coriaceis, circiter 1.75 m. longis, 3 cm. latis, tenuiter acuminatis, nitidis, margine acute serratis, costa subtus in partibus superioribus serratis; syncarpiis 3 ad 5, ovoideis vel ellipsoideis, confertis, in spica dispositis, 6 ad 8 cm. longis; drupis numerosis, 1-locellatis, induratis, 2 cm. longis, circiter 1 cm. latis, angulatis, deorsum angustatis, alte connatis, apice convexis, stylo abrupte terminatis; stylis induratis, obliquis, 4 mm. longis et latis, nitidis, plerumque 2-dentatis.

A shrub about 3 m. high. Leaves coriaceous, shining, smooth, about 1.75 m. long, 3 cm. wide, the midrib somewhat impressed on the upper surface, prominent on the lower surface, smooth except in the upper part and beneath where it is finely toothed; the lateral nerves slender, obscure, about 30 on each side of the midrib, the margins rather coarsely and sharply toothed in the lower part and with much more numerous, smaller, rather densely arranged teeth in the upper part, the apex very slenderly caudate-acuminate. Syncarps crowded in erect, peduncled racemes from 3 to 5 in a head, ovoid to ellipsoid, 6 to 8 cm. long, 5 to 6 cm. in diameter, dark-brown when dry, the peduncles up to 20 cm. long, thickened upward, about 1 cm. in diameter, marked with conspicuous, indurated crests, the remnants of fallen sheaths. Drupes numerous, oblong-obovoid, 1-celled, about 2 cm. long, 1 cm. wide, angular, narrowed below, united for ¾ of their length; the pericarp indurated, the hollow portion above the seed 4 to 5 mm. in diameter, the apical free portions convex, abruptly terminated by the somewhat oblique, indurated, shining style which is about 4 mm. long and wide and usually with 2 conspicuous teeth.

British North Borneo, Sandakan, *Ramos 1790,* December, 1920. In rather dry forests at low altitudes. A species belonging in the group with *Pandanus labyrinthicus* Kurz, but with fewer, much smaller syncarps and somewhat smaller drupes.

Pandanus matthewsii sp. nov. § *Astrostigma.*

Frutex, ramis ultimis 1.5 cm. diametro; foliis numerosis, coriaceis, in siccitate pallidis, usque ad 1 m. longis, 1.5 cm. latis, tenuiter acuminatis, margine distanter serratis; syncarpiis solitariis, erectis, ellipsoideis, circiter 8 cm. longis, pedunculatis, drupis numerosissimis, 1-locellatis, confertis, lineari-oblanceolatis, 1.5 ad 1.8 cm. longis; stigma in syncarpio imbricata, plana, 2.5 ad 3 mm. diametro, margine perspicue dentata vel crenato-dentata.

A shrub, the ultimate branches about 1.5 cm. in diameter. Leaves numerous, coriaceous, pale when dry, up to 1 m. long, about 1.5 cm. wide, gradually narrowed upward to the slenderly acuminate apex, the margins rather distantly and sharply toothed, the midrib on the lower surface in the upper part with similar teeth, the teeth slender, ascending, 1 to 1.5 mm. long, the midrib prominent on the lower surface, impressed on the upper surface, the lateral nerves slender, 25 to 30 on each side of the midrib, densely arranged. Staminate inflorescences club-shaped, about 7 cm. long, 1.6 cm. in diameter, the peduncles about 6 cm. long, subtended by several, oblanceolate, sharply acuminate, chartaceous bracts about 9 cm. in length. Syncarps terminal, solitary, erect, ellipsoid, about 8 cm. long, 4.5 to 5 cm. in diameter, their peduncles up to 10 cm. long, about 6 mm. in diameter, brown, shining and longitudinally sulcate when dry, the leaf-like bracts subtending the syncarps, up to 25 cm. in length. Drupes very numerous, crowded, linear-oblanceolate, 1.5 to 1.8 cm. long, about 2 mm. in diameter, 1-celled, attenuate at the base, united throughout except for the 2 mm. long stylar portion; the stigmas plane, subreniform, imbricate, 2.5 to 3 mm. in diameter, their margins distinctly and radiately dentate or crenate-dentate.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1321,* October, 1920. In flat forests along streams at low altitudes. A very characteristic species belonging in the group with *Pandanus stelliger* Ridl. and *P. discostigma* Martelli, for which Martelli has proposed the sectional name *Astrostigma.* It is most closely allied to the latter species, but differs radically in its longer leaves, larger ellipsoid syncarps, and distinctly toothed stigmas. The species is dedicated to Mr. D. M. Matthews, formerly Conservator of Forests in British North Borneo.

Pandanus obovoideus sp. nov. § *Acrostigma.*

Frutex erectus, circiter 2 m. altus; foliis 2 ad 2.5 m. longis, 3.5 ad 4 cm. latis, coriaceis, abrupte acuminatis, margine denticulatis; syncarpiis 4 vel 5, confertis, obovoideis, 8 ad 10 cm. longis, 7 ad 9 cm. latis; drupis numerosissimis, confertis, 1-locellatis, circiter 3 cm. longis, usque ad 5 mm. diametro, apice pyramidatis, scaberulis, brunneis, attenuatis; stylis rectis vel curvatis, rigidis, spiniformis, circiter 1 cm. longis.

An erect shrub about 2 m. high. Leaves 2 to 2.5 m. long, 3.5 to 4 cm. wide, coriaceous, rather pale when dry and somewhat glaucous beneath, margins distantly and minutely toothed, the midrib beneath in the upper half sparingly denticulate, the two lateral nerves on the upper surface sparingly denticulate for the upper 20 to 30 cm., apex slightly acuminate, the acumen rigid, slender, 2 to 3 cm. long. Syncarps usually 5, obovoid, crowded at the apex of the peduncle, 8 to 10 cm. long, 7 to 9 cm. in diameter. Drupes very numerous, crowded, about 3 cm. long, up to 5 mm. in diameter, base attenuate, narrowed into the rigid, very sharp, straight or curved style, the apical part 10 to 12 cm. long, brown when dry, minutely scabrid. Endocarp in the lower one-half, about 1 cm. long, base acute, apex rounded. The hollow space in the mesocarp about 8 mm. long, less than 5 mm. wide.

British North Borneo, Kudat, *Castro 976*, November 20, 1920. In the hills on the Pitas Estate, altitude about 25 m. This species must be closely allied to *Pandanus gibbsianus* Martelli, which, however, according to Miss Gibbs, quoted by Martelli, has leaves 10 to 12 cm. wide, while in the present species they do not exceed 4 cm. in width. The obovoid, rather than oblong or globose syncarps, are rather smaller than in Martelli's species, but there are apparently but slight differences in the drupes.

Pandanus pachyphyllus sp. nov. § *Acrostigma.*

Caulis 3 cm. diametro, 10 ad 15 cm. alta, simplex; foliis numerosis, confertis, crasse coriaceis, circiter 3.2 m. longis, 5 ad 6 cm. latis, tenuiter acuminatis, margine acute dentatis, dentibus superioribus parvis confertis, inferioribus majoribus distantibus patulis; syncarpiis erectis, solitariis, globosis, 10 cm. diametro, drupis numerosissimis, confertis, 1-locellatis, circiter 4 cm. longis, 5 mm. diametro, in dimidio inferiore connatis, in dimidio libero lanceolatis perspicue 5-carinatis acuminatis brunneis 4 ad 5 mm. diametro, rectis vel leviter curvatis, stigmate spiniforme.

Stemless or nearly stemless, the leaf-bearing portions of the stems above the surface of the ground 10 to 15 m. high, about 3 cm. in diameter, unbranched. Leaves numerous, crowded, thickly coriaceous, about 3.2 m. long, 5 to 6 cm. wide, narrowed upward to the slenderly acuminate apex, pale when dry, somewhat shining, the midrib impressed on the upper surface, prominent on the lower surface, the lower part furnished with widely scattered, rather stout teeth, the upper part finely and rather closely toothed on the lower surface, the 2 lateral nerves finely toothed on the upper surface near the apex, the margins with distant, stout, spreading teeth in the lower part, rather finely and closely toothed in the upper part. Syncarps erect, terminal, globose, about 10 cm. in diameter, their peduncles about 8 mm. in diameter, obscurely angled, brown, 10 to 15 cm. long. Drupes very numerous, crowded, 1-celled, including the stylar and stigmatic portions 4 cm. long, the lower 2 cm. entirely united, the individual drupes about 5 cm. in diameter, narrowed below, the pericarp rather thin, the seeds about 1 cm. long, the empty portion above the seeds about 4 mm. in length; free portions lanceolate, often somewhat curved, brown, prominently 5-keeled, acuminate, 4 to 5 mm. in diameter, narrowed upward to the spiniform, somewhat curved stigma, the free portions equalling the drupes proper in length.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1541*. In forests along small streams at low altitudes. A species strongly characterized by being practically acaulescent and unbranched, as well as by its greatly elongated, thickly coriaceous leaves and its solitary, erect, globose syncarps. The free, lanceolate, acuminate, somewhat curved, prominently 5-carinate portions equal the drupe proper in length, the drupes being wholly united. It apparently belongs in the group with *Pandanus danckelmannianus* K. Schum. of New Guinea.

GRAMINEAE.

Themeda Forskal.

Themeda frondosa (R. Br.) Merr. Interpret. Herb. Amb. (1917) 89.

Anthistiria frondosa R. Br. Prodr. (1810) 200.

Themeda arguens Hack. in. DC. Monong. Phan. **6** (1889) 657, non *Stipa arguens* Linn.

British North Borneo, Sandakan, *Ramos 1868*. In open places at low altitudes. Malay Peninsula and Archipelago to tropical Australia. *Themeda arguens* Hack. is properly the name for the species currently known as *T. ciliata* Hack. of India.

Panicum Linnaeus.

Panicum carinatum Presl, Rel. Haenk. **1** (1830) 309.

British North Borneo, Sandakan, *Yates 8*, *Ramos 1305*. In thickets at low altitudes. Throughout the Philippines, perhaps occuring in some other parts of Malaya; not always clearly distinguishable from *Panicum patens* Linn.

Panicum distachyum Linn. Mant. 1 (1867) 138.

British North Borneo, Sandakan, *Ramos 1765*. Along roads and in open places. Not previously recorded from Borneo. India to China, through Malaya to tropical Australia.

Dinochloa Buse.

Dinochloa pubiramea Gamble in Philip. Journ. Sci. **5** (1910) Bot. 279; Camus Bamb. (1913) 171.

British North Borneo, near Sandakan, *Agama 1019*, November, 1920. Philippines (Basilan, Mindanao, Negros, Samar, Leyte). This adds another species to the comparatively small list of those known only from Borneo and the Philippines.

CYPERACEAE.

Mapania Aublet.

Mapania sessilis sp. nov. § *Pandanophyllum*.

Inflorescentiis spiculiformibus, sessilibus, plerisque infra foliis, castaneis, compressis vel plus minusve triquetris, numerosis, oblongis, 3—3.5 cm. longis; bracteis inferioribus 3—5 mm. longis, 6 vel 8 suprioribus imbricatis, oblongo-ovatis, acutis, leviter carinatis, 2.5 cm. longis, 1 cm. latis; acheniis circiter 6, osseis, oblongo-ellipsoideis, 7 ad 8 mm. longis, 3.5 mm. diametro, tenuiter longissime rostrato-acuminatis; foliis numerosis, usque ad 1.3 m. longis, 1.5 cm. latis, deorsum leviter angustatis, basi 1 cm. latis, supra gradatim angustatis, tenuiter longissime caudato-acuminatis, margine serrulatis.

Caudex rather stout, castaneous, somewhat triquetrous, 1.5 cm. in diameter, about 10 cm. high. Leaves numerous, up to 1.3 m. long, about 1.5 cm. wide. gradually narrowed upward to the very slenderly long-acuminate apex, only slightly narrowed below, the basal portions about 1 cm. in width, margins serrulate throughout except near the base, the basal sheathing portions of the leaves castaneous. Inflorescences numerous, sessile or subsessile, of single spikelet-like heads, axillary and along the caudex below the leaves, oblong, castaneous when dry, 3 to 3.5 cm. long, 8 to 10 mm. wide, more or less compressed or somewhat triquetrous, the lower few bracts ovate-oblong to ovate, 3 to 5 mm. long, the succeeding six or eight bracts castaneous, imbricate, shining, somewhat keeled, acute, about 2.5 cm. long, 1 cm. wide, generally oblong-ovate. Glumes white, membranaceous, crowded, scarcely extending beyond the upper bracts. Achenes about 6 in each head, hard, dry, terete or slightly compressed, dark-colored, oblong-ellipsoid, 7 to 8 mm. long, about 3.5 mm. in diameter, long-beaked, the beak and persistent portions of the style about as long as the achenes.

British North Borneo, near Sandakan, *Ramos 1856*, December, 1920. In damp forests along small streams at low altitudes. A remarkably distinct species well characterized by its sessile or subsessile, numerous, oblong, simple, spikelet-like heads and its unusually large, imbricate bracts, the glumes membranaceous and scarcely extending beyond the uppermost bracts. It is the only species of the genus with which I am acquainted, in which the inflorescences are sessile or nearly so, while in this form they are, for the most part, confined to the caudex below the leaves, occurring singly in the axils of decayed leaves from the very base of the caudex.

Mapania affinis sp. nov. § *Halostemma.*

Caudex brevis, crassous, circiter 1.5 cm. diametro; foliis numerosis, perspicue 3-nerviis, usque ad 1.7 m. longis 3 vel 3.5 cm. latis, deorsum vix angustatis, apice subabrupte caudato-acuminatis, acuminis serrulatis tenuibus 3 ad 5 cm. longis, margine et costa subtus in partibus superioribus minute serrulatis; scapis paucis, glabris, sub anthesin circiter 5 cm. longis, sub fructu usque ad 14 cm. longis, partibus inferioribus (ca. 5 cm.) bracteis numerosis imbricatis instructis; capitulis sub anthesin circiter 2 cm. longis, bracteis capitulum aequantibus, sub fructu 5 vel 6 cm. diametro; spiculis circiter 18, ovoideis, 2.5 cm. longis, liberis; acheniis nigris, osseis, oblongo-ovoideis, 4 mm. longis, breviter acuminatis.

Caudex short, stout, about 1.5 cm. in diameter. Leaves numerous, prominently 3-nerved, up to 1.7 m. long, 3 to 3.5 cm. wide, scarcely narrowed below, the basal portions folded and usually straw-colored, the apex subabruptly caudate-acuminate, the acumen slender, serrulate, 3 to 5 cm. long, the margins and midrib on the lower surface in the upper part of the leaf minutely serrulate. Scapes few, glabrous, terete, in anthesis about 5 cm. long, in fruit up to 14 cm. long, somewhat thickened upward and 3 to 4 mm. in diameter, the basal 5 cm. supplied with numerous imbricate bracts, the lower ones close, broadly ovate, about 1 cm. long, the upper ones gradually longer, the uppermost oblong-ovate, acute up to 3.5 cm. long. Heads in anthesis about 2 cm. long, oblong-ovoid, the outer bracts as long as the head, about 12 mm. wide, elliptic-ovate, acute, somewhat keeled, the apical portions sparingly appressed-pubescent; heads in fruit 5 to 6 cm. in diameter,, composed of numerous (15 to 18) ovoid, large, free spikes up to 2.5 cm. long. Achenes numerous, black, bony, oblong-ovoid, terete or irregularly compressed, about 4 mm. long, shortly acuminate.

British North Borneo, near Sandakan, *Ramos 1596*, November, In damp forests at low altitudes. The same species is represented by *Clemens 9330*, collected at Jolo, Sulu Archipelago, October 15, growing on forested slopes at an altitude of about 800 m. A species belonging in the general alliance with *Mapania palustris* F.-Vill., but differing radically in its mature fruiting heads which are much larger than in the latter species, the individual spikes or partial inflorescences being also much longer, up to 2.5 cm. in length. The peduncles are also shorter in the present species and are entirely glabrous. In all the Malayan material representing *M. palustris* that I have seen the peduncles are furfuraceous.

Mapania gracilipes sp. nov. § *Pandanophyllum.*

Caudex brevis, circiter 1 cm. crassus; foliis numerosis, circiter 60 cm. longis, 1 cm. latis, deorsum vix angustatis, partibus inferioribus plicatis, apice longe tenuiterque caudato-acuminatis, margine obscure serrulatis; scapis tenuibus,, 12 ad 20 cm. longis, vix 1 mm. diametro, basi squamis paucis oblongis 5 ad 13 mm. longis instructis; capitulis solitariis, circiter 1 cm. longis, spicis propriis inter se vix distinctis, squamis exterioribus oblongo-ovatis, capitula aequantibus; capitulis fructiferis ovoideis, circiter 1.5 cm. diametro; acheniis ovoideis, nigris, osseis, 2.5 mm. longis, breviter apiculatis.

Caudex short,, about 1 cm. in diameter. Leaves numerous, about 60 cm. long, 1 cm. wide, 3-nerved, pale-grayish when dry, the basal portions straw-colored, scarcely narrowed below, the apex gradually narrowed in a long, slender, caudate, denticulate acumen, the margins and the midrib beneath in the upper part obscurely serrulate. Scapes several, lateral, very slender, terete, 12 to 20 cm. long, scarcely 1 mm. in diameter, subtended at the base by few, oblong, 5 to 15 mm. long bracts, each scape bearing a solitary head about 1 cm. long, the head made up of several spikes which are scarcely distinct; external scales oblong-ovate, about 1 cm. long, brownish, equalling the head in length; fruiting heads ovoid, about 1.5 cm. in diameter and 1 cm. in length. Achenes obovoid, lax, bony, 2.5 mm. long, shortly apiculate.

British North Borneo, near Sandakan, *Ramos 1855*, December, 1920. In damp forests at low altitudes. This species is well characterized by its narrow leaves; its very slender elongated scapes; and its small heads, the latter in anthesis about 1 cm. long, the outer bracts as long as the head. In fruit the heads appear as if they were made of three or more spikes, but these spikes are scarcely distinct from each other. The bony achenes are but 2.5 mm. in length, and are very shortly apiculate. It is probably most closely allied to *Mapania debilis* C. B. Clarke.

Mapania heterocephala sp. nov. § *Pandanophyllum.*

Caudex brevis, circiter 1.5 cm. crassus; foliis numerosis, pallidis, 1-nerviis, circiter 85 cm. longis, 2.5 ad 3 cm. latis, deorsum leviter angustatis, partibus inferioribus circiter 2 cm. latis, sursum gradatim angustatis, longe caudato-acuminatis, margine et costa subtus in partibus superioribus serrulatis; scapis paucis, usque ad 9 cm. longis, 1.5 mm. diametro, partibus inferioribus (2 ad 3 cm.) bracteis numerosis imbricatis instructis; inflorescentiis spiciformibus, solitariis vel trinis, cylindraceis, circiter 3 cm. longis, 8 mm. diametro; bracteis numerosis, imbricatis, circiter 13 mm. longis, 6 mm latis, oblongo--ellipticis, obtusis et brevissime apiculatis, margine scariosis; acheniis anguste oblongo-obovoideis, teretibus, osseis, 5 mm. longis, acutis vel brevissime apiculatis.

Caudex short, stout, about 1.5 cm. in diameter. Leaves numerous, pale-grayish when dry, not very rigid, 1-nerved, about 85 cm. long, 2.5 to 3 cm. wide, slightly narrowed below, the basal part about 2 cm. wide, gradually narrowed upward to the long and slenderly caudate-acuminate apex, the margins and the midrib on the lower surface in the upper part serrulate. Scapes few, lateral, from the caudex below the leaves, up to 9 cm. long, 1.5 mm. in diameter, terete, the lower two to three cm. supplied with numerous imbricate bracts, the bracts ovate to oblong-ovate, 1 to 1.5 cm. long. Inflorescences consisting of a single, solitary, spike-like head or sometimes of three separate, fascicled, similar heads, both types occuring on the same plant, the individual heads terete, about 3 cm. long, 8 mm. in diameter, composed of numerous imbricate bracts, the bracts oblong-elliptic about 13 mm. long, 6 mm. wide, obtuse and very shortly apiculate, their margins scarious. Achenes bony, narrowly oblong-obovoid, terete, grayish, about 5 mm. long, 2 mm. in diameter, slightly narrowed below, the apex acute or very slightly apiculate.

British North Borneo, Sandakan, *Ramos 1854*. December, 1920. In damp forests along small streams at low altitudes. This species is remarkable in the inflorescences. When the scape bears a single head, the head very strongly resembles that of *Mapania humilis* F.- Vill., but the same plant other scapes occur which bear three fasciculately arranged spikes at their apices. In leaf characters, however, the species is remote from *M. humilis*. It is probably most closely allied to *Mapania longa* C. B. Clarke, but has much shorter scapes and broader leaves.

Cyperus Linnaeus.

Cyperus procerus Rottb. Descr. Nov. Pl. (1773) 29.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1681*. In open swampy places. India to southern China, Indo-China and Java.

ARACEAE.

Schismatoglottis Zollinger & Moritzi.

Schismatoglottis ferruginea sp. nov.

Caudiculus abbreviatus vel paullo elongatus, usque ad 6 mm. crassus, hypogaeus; petiolis et pedunculis et subtus foliis ad costam nervosque perspicue ferrugineo-ciliatis; foliis membranaceis, ellipticis vel obovato-ellipticis, 12 ad 22 cm. longis, breviter acuminatis, basi rotundatis et perspicue cordatis; nervis primariis utrinque circiter 20; petiolo 5 ad 17 cm. longo; inflorescentiis paucis, pedunculatis (pedunculo 3 ad 4 cm. longo); spathis subcylindraceis, haud constrictis, 4 ad 7 cm. longis, 6 mm. diametro, deorsum plus miunsve ciliatis, sursum glabris. Species *S. barbatae* Engl. affinis.

Petioles, exposed portions of the short caudex, peduncles, and the lower surface of the leaves, especially along the midrib, conspicuosly ferrugineously ciliate with elongated spreading hairs. Leaves membranaceous when dry, elliptic to obovate-elliptic, 12 to 22 cm. long, 6 to 10 cm. wide, the apex shortly acuminate, the base rounded and distinctly cordate, the basal lobes more or less overlapping, the sinus 8 to 15 mm. deep, the margins slightly revolute, the upper surface olivaceous, glabrous, somewhat shining, the lower surface paler than the upper; the indumentum largely confined to the midrib, primary and secondary nerves; primary nerves spreading, curved, ultimately ascending, about 20 on each side of the midrib, not very much more prominent than the secondary ones; petioles 5 to 17 cm. long, up to 5 mm. in diameter, sheathing in the lower 3 to 4 cm. Inflorescences few, the peduncles 3 to 4 cm. long. Spathes subcylindric, 4 to 7 cm. long, about 6 mm. in diameter, the basal portion more or less ciliate, the deciduous limb glabrous.

British North Borneo, Batu Lima near Sandakan, *Ramos 1657*, (type), *1753*, November, 1920. On boulders in forests at low altitudes. A species strongly characterized by its indumentum, in this character approaching *Schismatoglottis barbata* Engl., but differing radically in its much larger size and in its leaves being conspicuously cordate at the base.

COMMELINACEAE.

Forrestia Lesson.

Forrestia glabrata Hassk. in Flora **47** (1864) 630; C. B. Clarke in DC. Monog. Phan. **3** (1881) 238.

British North Borneo, near Sandakan, *Wood 932*; Mount Kinabalu, Kiau, *Clemens 9950, 9997*: Sarawak, *Native collector 2120, 2147 Bur. Sci.* Bengal, Sumatra, Java.

LILIACEAE.

Pleomele Salisbury.

Pleomele borneensis sp. nov.

Frutex vel arbor parva, ramosus, glaber, ramulis 1.2 ad 1.5 cm. diametro; foliis numerosis, confertis, lineari-lanceolatis, coriaceis, 45 ad 55 cm. longis, 1.5 ad 2.5 cm. latis, acuminatis, deorsum haud angustatis; paniculis terminalibus, erectis, multifloris, ramis usque ad 40 cm. longis; floribus fasciculatis, 2 cm. longis, tubo 1 cm. longo, lobis linearis, 1 mm. latis, obtusis; fructibus subglobosis, brunneis, leviter inaequilateralibus, apiculatis, 1-, rariter 2- locellatis, 8 ad 10 mm. diametro.

A branched shrub or small tree entirely glabrous, the ultimate branches 12 to 15 mm. in diameter. Leaves numerous, crowded at the tips of the branchlets, linear-lanceolate, coriaceous, 45 to 55 cm.. long, 1.5 to 2.5 cm. wide, rather slenderly acuminate, not or but slightly narrowed below, the base sheathing. Panicles terminal, erect, 50 to 60 cm. long, the branches ascending, brownish or olivaceous when dry, up to 40 cm. long, the lower ones subtended by reduced leaves, the upper ones by oblong-lanceolate bracts 1.5 to 2 cm. in length, or the uppermost bracts less than 1 cm. in length. Flowers 2 cm. long, in fascicles of 3 to 5 along the primary branches, their pedicels up to 6 mm. long, the subtending bracts broadly ovate to oblong, obtuse, 2 to 4 mm. long, the bracteoles smaller. Perianth-tube 1 cm. long, the linear lobes 1 mm. wide, obtuse. Anthers 2 mm. long. Ovary oblong, glabrous, 2 mm. long. Fruits dark-brown, fleshy, subglobose, somewhat inequilateral, apiculate by the persistent styles, when dry 8 to 10 mm. in diameter, 1-, rarely 2-celled.

British North Borneo, near Sandakan, *Ramos 1414* (type), *Wood 745*, October and February, 1920, *Castillo 608*, February, 1918. In forests and along small streams at low altitudes. A species belonging in the group with *Pleomele angustifolia* N. E. Br., but with much larger leaves than that species.

Smilax Tournefort.

Smilax gigantea sp. nov. § *Eusmilax.*

Frutex scandens, ramis teretibus, striatis, 8 ad 10 mm. diametro, aculeatis; foliis late ovatis, chartaceis, circiter 35 cm. longis latisque, breviter abrupteque acuminatis, basi latissime rotundatis, perspicue cordatis, 9-nerviis, supra glabris, subtus pubescentibus; infructescentiis circiter 30 cm. longis, umbellulis numerosis, 5 vel 6 cm. diametro, longe pedunculatis, fasciculatis, rhachibus compressis, circiter 20 cm. longis; fructibus globosis, tenuiter pedicellatis, circiter 1 cm. diametro.

A large, coarse, woody vine, the inflorescence-bearing branches terete, brown, striate, 8 to 10 mm. in diameter, armed with scattered, very stout, narrowly pyramidal spines about 2 mm. in length. Leaves broadly ovate, chartaceous to subcoriaceous, about 35 cm. long and wide, the apex very shortly and abruptly acuminate, the base broadly rounded and deeply cordate, the upper surface smooth, glabrous, shining, brownish-olivaceous, the lower surface brownish, rather softly and densely pubescent, the indumentum short, not at all stellate; petioles stout, about 7 cm. long, the sheathing basal portion about 3 cm. in length; nerves about 9, all basal, prominent, the reticulations rather lax. Infructescences about 30 cm. long, the umbels racemosely disposed, from 3 to 6 in the axil of each bract, their peduncles 7 to 10 cm. long, the rachis usually about 20 cm. in length, 4 to 6 mm. wide, strongly flattened, the umbels up to

25 in each infructescence. Fruits globose, shining when dry, about 1 cm. in diameter, 12 to 25 in each umbel, their pedicels slender, 1.5 to 1.8 cm. in length.

British North Borneo, Sebuga near Sandakan, *Ramos 1850*, November, 1920. On damp forested slopes at low altitudes; locally known to the Malays as *Kababu*. A remarkably distinct species on account of its very large, broadly ovate, cordate leaves which are rather densely pubescent on the lower surface; and its ample infructescences which are nearly as long as the leaves. It is allied to *Smilax borneensis* C. DC., but differs radically in its vegetative characters and in the indumentum on the lower surface of the leaves being of simple not stellate hairs.

Smilax woodii sp. nov. § *Coilanthus*.

Species *S. hypoglaucae* affinis; ramis ramulisque laevibus, inermibus, teretibus, tenuibus; foliis coriaceis vel subcoriaceis, lanceolatis vel elliptico-lanceolatis, 6 ad 9 cm. longis, acuminatis, basi acutis vel subrotundatis, 3- vel 5-nerviis, subtus glaucis; pedunculis tenuibus, quam petiolo longioribus; floribus ♂ umbellatis: sepalis glaucescentibus, 2 mm. longis; pedicellis 3 vel 5 mm. longis.

A scandent, glabrous, unarmed, somewhat woody vine, the branches and branchlets slender, brown, terete. Leaves coriaceous to subcoriaceous, lanceolate to elliptic-lanceolate, 6 to 9 cm. long, 2 to 3.5 cm. wide, acuminate, base acute to subrounded, 3- or 5-nerved, nerves slender, reticulations very obscure, the upper surface brownish, shining, the lower very glaucous; petioles 5 to 10 mm. long, those of the older leaves sometimes tendriliferous. Umbels axillary, solitary, each about 15-flowered, the peduncles up to 10 mm. long, the pedicels 3 to 5 mm. long. Male flowers somewhat glaucous, the sepals ovate, 2 mm. long, 1.5 mm. wide; petals oblong, obtuse, 1.5 mm. long, 0.6 mm. wide; stamens 6.

British North Borneo, Sandakan, *Wood 1097* (type), October 28, 1920, on slopes, altitude about 18 m. Sarawak, *Native Collector 835 Bur. Sci.* August, 1912. A species manifestly closely allied to *Smilax hypoglauca* Benth., and *S. peguana* A. DC., but distinct from both.

AMARYLLIDACEAE.

Curculigo Gaertner.

Curculigo borneensis sp. nov.

Foliis chartaceis, anguste lanceolatis, 35 ad 50 cm. longis, 5 ad 6 cm. latis, utrinque subaequaliter angustatis, basi cuneatis, apice tenuiter filiformibus, acuminatis, supra glabris, subtus parcissime pubescentibus, nervis utrinque 5 vel 6; petiolo 20 ad 25 cm. longo; inflorescentiis erectis, brevissime pedunculatis, densis, subglobosis vel ovoideis, circiter 4 cm. diametro, bracteis exterioribus ovatis oblongo-ovatis; 2 vel 3 cm. longis, tenuiter acuminatis, junioribus plus minusve ciliatis; petalis anguste oblongis, 10 mm. longis, tubo

dense villoso; fructibus ovoideis, hirsutis, 8 mm. longis, rostratis, rostro 8 ad 10 mm. longo, hirsuto.

A tufted, plant from a rather stout, short rootstock. Leaves chartaceous, narrowly lanceolate, 35 to 50 cm. long, 5 to 6 cm. wide, subequally narrowed at both ends, the base cuneate, the apex very slenderly acuminate, the tip filiform, the upper surface glabrous, the lower surface with very few scattered hairs; lateral nerves distinct, 5 to 6 on each side of the midrib; petioles 20 to 25 cm. long, rather slender, glabrous or with few scattered hairs, their bases inflated, sheathing. Inflorescences erect or suberect, dense, short-peduncled, subglobose or ovoid, about 4 cm. in diameter, the bracts chartaceous, ovate to oblong-ovate, 2 to 3 cm. long, the outer ones about 1 cm. wide, slenderly long-acuminate, when young more or less ciliate, in age glabrous or nearly so; peduncles more or less hirsute, about 2 cm. long. Flowers numerous, crowded, but few developing at one time, yellow, the perianth-tube extended at least 6 mm. above the ovary, villous, the segments narrowly oblong, about 10 mm. long, 2.5 mm. wide, slightly pubescent, ultimately nearly glabrous. Stamens as long as the perianth-segments, the anthers 3.5 to 4 mm. long, linear. Fruits ovoid, somewhat hirsute, about 8 mm. long, black when dry, tipped with a stout, 8 to 10 mm. long, hirsute beak.

British North Borneo, at Batu Lima and Sebuga near Sandakan, *Ramos 1837* (type), *1712,* November and December, 1920. In damp forests at low altitudes. A species belonging in the group with *Cucurligo latifolia* Dry. and most closely allied to *C. brevipedunculata* Elm. of Palawan and Balabac, differing from the latter especially in its longer perianth-segments and in its smaller fruits which have shorter beaks than in the Philippine species.

Curculigo glabrescens (Ridl.) comb. nov.

Curculigo latifolia Dry. var. *glabrescens* Ridl. Mat. Fl. Malay Penin. (Monocot.) **2** (1907) 67.

British North Borneo, Kudat, *Castro 982*: Sarawak, *Native Collector 435, 637, 1497, 2432, 2701 Bur. Sci.* Malay Peninsula, Sumatra.

DIOSCOREACEAE.

Dioscorea Linnaeus.

Dioscorea flabellifolia Prain & Burkill in Elmer. Leafl. Philip. Bot. **5** (1913) 1593, and in Journ. As. Soc. Bengal II **10** (1914) 12.

British North Borneo, Sibyguey, near Sandakan, *Ramos 1625.* In thickets and forests along streams at low altitudes. Previously known only from the Philippines, Laguna and Sorsogon Provinces, Luzon, Mindoro, and Catanduanes Island.

MARANTACEAE.

Phrynium Willdenow.

Phrynium inflatum sp. nov.

Species *P. capitato* similis, differt bracteis exterioribus multo majoribus, oblongo-ovatis, acuminatis, 7 vel 8 cm. longis, extus fulvo-villosis, vaginis supra capitulis valde inflatis, villosis; floribus longoiribus 'usque ad 2.5 cm. longis, sepalis 1.5 cm. longis, tenuiter acuminatis, fructibus ovoideis-trigonis, leviter villosis, in valvis tribus fissis, haud castaneis.

A species with the habit of *Phrynium capitatum*, exceeding 1 m. in height. Petioles glabrous except above the inflorescences. Leaves oblong, up to 50 cm. long and 10 cm. wide, firmly chartaceous, glabrous on both surfaces, the petioles produced about 14 cm. above the inflorescences, the lower half conspicuously inflated and fulvous-villous, about 3 cm. wide (spread) below. Heads in fruit about 5 cm. in diameter. Lower bract subtending the head, oblong-ovate, acuminate, coriaceous, long fulvous-villous outside, the others ovate acuminate, 3 to 3.5 cm. long, ultimately fibrillose. Pairs of flowers 2, the pedicels stout, about 1 mm. long, the bracteoles narrowly lanceolate, caudate-acuminate, 2.5 cm. long, 3 mm. wide. Ovaries 3-celled, densely fulvous-ciliate, the hairs 2 to 3 mm. long. Calyx lobes narrowly lanceolate, caudate-acuminate, 15 mm. long, 2 to 2.5 mm. wide. Corolla-tube slender, glabrous, 12 to 15 mm. long, the segments up to 9 mm. long. Fruit ovoid-trigonous, about 12 mm. long and wide, more or less fulvous-villous, 3-celled, 3-seeded, opening by 3 longitudinal valves, the pericarp indurated.

British North Borneo, Batu Lima near Sandakan, *Ramos 1488*. On forested slopes at low altitudes. A species strongly characterized by its unusually large first bract, its petioles being inflated above the insertion of the inflorescence, and its strongly trigonous, 3-celled, 3-valved, dehiscent, somewhat villous fruits. The flowers are much longer than in *Phrynium capitatum* Willd., attaining a length of at least 2.5 cm. Only remnants of very old flowers are available.

Phacelophrynium K. Schumann.

Phacelophrynium bracteosum K. Schum. in Engl. Pflanzenreich **11** (1902) 123.

British North Borneo, near Sandakan, *Agama 1033*: Sarawak, Baram District, Lio Matu, *Native Collector 2783 Bur. Sci., Moulton 6706*. Otherwise known only from the Philippines where it is widely distributed in southern Luzon, Samar, Leyte, Biliran, and Mindanao.

MORACEAE.

Artocarpus Forster.

Artocarpus clementis sp nov.

Arbor magna, subglabra, ramis 5 vel 6 mm. diametro, obscure puberulis; foliis coriaceis, glabris, nitidis, oblongo-ovatis vel ob-

longo-ovatis vel oblongo-lanceolatis, 12 ad 22 cm. longis, 4.5 ad 9 cm. latis, aequilateralibus, basi abrupte angustatis, acutis, apice acuminatis, nervis utrinque circiter 12 perspicuis; fructibus subglobosis, circiter 5.5 cm. diametro, anthocarpiis numerosis, leviter productis, ovoideis, obtusis, circiter 1 mm. longis, uniformiter ferrugineo-furfuraceo-hirsutis; seminibus numerosis, circiter 13 mm. longis, perianthii segmentis leviter hirsutis. Species *A. rigidae* affinis, sed foliis glabris et anthocarpiis brevissime productis.

A large tree glabrous except the very obscurely puberulent branchlets and the furfuraceous-hirsute tips of the anthocarps; branches brown, rugose, terete, 5 to 6 mm. in diameter, the younger branchlets frequently only 3 mm. in diameter. Leaves equilateral, entire, coriaceous, glabrous, shining, oblong-ovate to oblong-lanceolate, 12 to 22 cm. long, 4.5 to 9 cm. wide, the base rather abruptly narrowed, acute, usually gradually narrowed upward to the short, blunt-acuminate apex, brownish or brownish-olivaceous when dry, smooth, shining; lateral nerves about 12 on each side of the midrib, not impressed on the upper surface, very prominent on the lower surface, anastomosing near the margins, the primary reticulations distinct; petioles about 3 cm. long, 2.5 to 3 mm. in diameter, glabrous. Mature or nearly mature fruits subglobose, the base often somewhat cordate, about 5.5 cm. in diameter, their peduncles stout, 3 to 4 cm. in length, the tips of the anthocarps very numerous, ovoid, blunt, about 1 mm. long, the outer surface of the fruit uniformly furfuraceous-hirsute, the indumentum ferruginous. Seeds rather numerous, about 13 mm. long, the accrescent perianth segments more or less hirsute.

British North Borneo, Gurulau Spur, Mount Kinabalu, *Mrs. Clemens 10770,* November 27, 1915. In forests along trails. This species belongs in the group with, and is manifestly allied to *Artocarpus rigida* Blume, from which it is readily distinguished by its entirely glabrous leaves and by the very short tips of its anthocarps.

Artocarpus borneensis sp. nov.

Arbor circiter 10 m. alta, ramis teretibus, circiter 5 mm. diametro, ramulis leviter pubescentibus vel furfuraceis; foliis subcoriaceis, glabris, nitidis, ellipticis vel oblongo-ellipticis, integris, aequilateralibus, 9 ad 14 cm. longis, apice abrupte acuminatis, basi rotundatis vel late acutis, nervis utrinque 10 vel 12, perspicuis; inflorescentiis axillaribus, solitariis, ♂ oblongo-obovoideis, 12 mm. longis, brevissime pedunculatis, bracteolis peltatis, dense imbricatis, cupreis; fructibus subglobosis, 4 cm. diametro, laevibus, dense cupreo-furfuraceo-lepidotis, anthocarpiis haud productis; seminibus paucis, 10 ad 12 mm. longis.

A tree about 10 m. high, mature fruits densely and uniformly furfuraceous-lepidote, the indumentum cupreous. Branches terete, glabrous, about 5 mm. in diameter, the very young branchlets obscurely pubescent or slightly furfuraceous. Leaves subcoriaceous, glabrous, entire, elliptic to oblong-elliptic, 9 to 14 cm. long, 4 to 8

cm. wide, shining, the upper surface olivaceous, the lower surface brownish, apex rather abruptly acuminate, the acumen acute or obtuse, rather stout, about 1 mm. long, base rounded to broadly acute, equilateral or nearly so; lateral nerves 10 to 12 on each side of the midrib, very prominent on the lower surface, spreading, curved, arched-anastomosing close to the margins, the reticulations rather close, distinct on both surfaces; petioles 8 to 10 mm. long. Staminate inflorescences oblong-obovoid to pyriform, axillary, solitary, yellow when fresh, brown when dry, about 12 mm. long, their peduncles stout, ferruginous-puberulent, 1 to 2 mm. in length. Flowers very numerous, crowded, 1 mm. long or less, the anthers only slightly exserted; bracteoles peltate, ciliate, densely imbricate, in the young inflorescences quite concealing the flowers, cupreous. Mature fruit red when fresh, cupreous or castaneous when dry, densely and uniformly furfuraceous-lepidote, smooth, the tips of the anthocarps not evident, subglobose or depressed-globose, about 4 cm. in diameter. Seeds very few, sometimes only 3 or 4 maturing in one fruit, ovoid, 10 to 12 mm. in length, the accrescent perianth segments fleshy, glabrous.

British North Borneo, Batu Lima near Sandakan, *Ramos 1592* (type), *1749*, November, 1920, the former with mature or nearly mature fruits, the latter with staminate inflorescences. In damp forests at low altitudes. A species belonging in the group with *Artocarpus gomeziana* Wall. and manifestly closely allied to that species, but at once distinguished by its densely and uniformly furfuraceous-lepidote fruits, the indumentum being cupreous or castaneous.

Artocarpus peltata sp. nov.

Arbor circiter 25 m. alta, partibus junioribus dense ferrugineo-pubescentibus; foliis chartaceis, oblongis vel oblongo-lanceolatis, 20-28 cm. longis, aequilateralibus, integris vel junioribus minute denticulatis, basi rotundatis, distincte peltatis, apice acuminatis, subtus molliter pubescentibus, nervis utrinque circiter 18, perspicuis, stipulis oblongo-ovatis, inaequilateralibus, pubescentibus, 12 mm. longis; inflorescentiis ♀ axillaribus, globosis, pedunculatis; fructibus junioribus 2 cm. diametro, globosis, laevibus, cinereo-puberulis, anthocarpiis haud productis, areolatis, areolis haud 0.5 mm. diametro; seminibus paucis.

A tree up to 25 m. high, the younger parts densely and uniformly ferrugineous-pubescent with short hairs. Branches subterete, the ultimate ones 4 to 5 mm. in diameter, very densely pubescent. Leaves chartaceous, oblong to oblong-oblanceolate, 20 to 28 cm. long, 6 to 10 cm. wide, entire, when very young pubescent on both surfaces, in age glabrous on the upper surface except for the pubescent midrib, the lower surface softly pubescent with short hairs, the base rounded, equilateral, narrowly peltate, the petiole inserted 2 to 5 mm. from the leaf margins, the apex distinctly acuminate and usually shortly apiculate, the margins of very young leaves slightly denticulate; lateral nerves about 18 on each side of the midrib, spreading, somewhat curved, prominent on the lower surface, the reticulations rather distinct; petioles 1 to 1.5 cm. long, densely pubescent; stipules oblong-ovate, inequilateral, pubescent, acuminate, about 12 mm. long. Pistillate inflorescences axillary, globose, 2 cm. or more in diameter (immature), their peduncles densely pubescent, somewhat thickened upward, about 4 cm. long, the surface grayish-puberulent, the position of the numerous anthocarps indicated by small areolae less than 0.5 mm. in diameter, the tips of the anthocarps not projecting. Seeds apparently few in each syncarp.

British North Borneo, Sandakan, *Villamil 168,* March, 1916. On open slopes at an altitude of about 80 m. This species manifestly belongs in the group with *Artocarpus lakoocha* Roxb., but is readily distinguished from it and from other species in the same alliance by its peltate leaves.

URTICACEAE.

Laportea Gaudichaud.

Laportea oblanceolata sp. nov.

Arbor circiter 8 m. alta; foliis oblanceolatis, subcoriaceis, usque ad 35 cm. longis, integris, tenuiter acuminatis, deorsum attenuato-angustatis, subsessilibus vel breviter petiolatis, nervis utrinque circiter 12, perspicuis; infructescentiis longe pedunculatis, folia subaequantibus, floribus flabellatim dispositis, receptaculis accrescentibus.

A tree about 8 m. high, somewhat pubescent, the older parts nearly glabrous except for the short persisting stinging hairs. Ultimate branches rather stout, about 8 mm. in diameter when dry, rugose, the leaf scars conspicuous. Leaves oblanceolate, subcoriaceous, entire, olivaceous, 25 to 35 cm. long, 6 to 12 cm. wide, rather slenderly acuminate, gradually narrowed below to the attenuate-decurrent base, white-punctate on both surfaces, the upper surface glabrous, the lower with short stiff hairs; lateral nerves about 12 on each side of the midrib, prominent; petiole 1 cm. long or less, the lamina often decurrent to the very base; stipules ovate, up to 1.5 cm. long. Young ♀ inflorescences up to 17 cm. long, with numerous short, stiff, white hairs, in fruit long peduncled and equalling the leaves in length. Female flowers sessile in a single row on or near the margins of the flabellate receptacle, the receptacle accrescent, lobed, and in fruit up to 1 cm. in diameter. Achenes glabrous, compressed, ovate, more or less inequilateral, about 4 mm. long. Styles somewhat pubescent, about 3 mm. long.

British North Borneo, Batu Lima, near Sandakan, *Agama 1026* (type), *Ramos 1247,* November, 1920; Baloran River, Labuk Bay, *Wood 676,* March, 1919. On steep slopes and in open places at low altitudes. A species probably as close to *Laportea stimulans*

Miq. as to any other described form, but easily distinguished by its sessile or subsessile leaves.

PROTEACEAE.

Helicia Loureiro.

Helicia excelsa Blume in Ann. Sci. Nat. II **1** (1834) 219.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1653.* In damp forests along small streams at low altitudes. Chittagong, Burma, Malay Peninsula, Singapore, and Sumatra.

LORANTHACEAE.

Viscum Linnaeus.

Viscum angulatum Heyne ex DC. Prodr. **4** (1830) 283.

British North Borneo, Sandakan, *Ramos 1228*: Sarawak, near Kuching, *Native collector 161* (*Bur. Sci.*), March, 1911. India to southern China, through Malaya to tropical Australia.

OLACACEAE.

Fissipetalum genus novum.

Flores regulares, hermaphroditi. Calyx 5-partitus, sepalis imbricatis. Petala 5, infra coalita, valvata, apice lobata, lobis binis, subdivaricatis, in alabastro inflexis. Stamina 5, petalis alterna, filamentis brevibus, glabris, corollae tubo adnatis; antherae erectae, oblongo-ovatae, 2-loculares, connectivo incrassato, minute apiculato. Discus O vel obscurus. Ovarium liberum, globosum, 1-loculare; stylus O; stigma conico-capitatum, sulcatum; ovula 3 vel 4, erecta. Fructus parvus, 1-locularis, 1-spermus.—Frutex erectus, subglaber, foliis alternis, integris, floribus axillaribus, breviter pedicellatis, solitariis vel depauperato-fasciculatis.

Fissipetalum borneense sp. nov.

Frutex subglaber 2 vel 3 m. altus, ramis ramulisque teretibus, glabris, vel ramulis obscure pubescentibus; foliis oblongis vel oblongo-ellipticis, chartaceis vel subcoriaceis, 12 ad 18 cm. longis, in siccitate brunneo-olivaceis, minutissime verruculosis, nitidis, utrinque subaequaliter angustatis, basi acutis, apice breviter obtuseque acuminatis, nervis utrinque circiter 8, distinctis, reticulis obsoletis vel subobsoletis; floribus circiter 7 mm. longis, sepalis pubescentibus, orbicularibus, petalis extus pubescentibus in dimidio parte, inferiore, lobis glabris; fructibus oblongo-ellipsoideis, glabris, 8 ad 9 mm. longis.

An erect, nearly glabrous shrub 2 to 3 m. high, the branches and branchlets terete, reddish-brown, glabrous or the younger branchlets obscurely pubescent. Leaves oblong to oblong-elliptic, 12 to 18 cm. long, 4.5 to 7 cm. wide, chartaceous to subcoriaceous, entire, subequally narrowed to the acute base and the shortly obtuse-acuminate apex, brownish-olivaceous, somewhat shining and minutely verruculose on both surfaces when dry, the upper surface glabrous, the lower surface glabrous or slightly pubescent; lateral nerves about 8 on each side of the midrib, distinct, ascending at an angle of about 45°, somewhat curved, obscurely and laxly anastomosing, the reticulations obsolete or nearly so; petioles 5 to 10 mm. long, deeply channelled on the upper surface. Flowers white, axillary, solitary or somewhat fascicled, their pedicels 3 to 4 mm. long, slightly pubescent, 2-bracteolate, the bracteoles ovate, pubescent, about 1.2 mm. long. Sepals 5, free, imbricate, somewhat pubescent, orbicular to orbicular-obovate, rounded, about 2.2 mm. in diameter, minutely puncticulate. Petals 5, united into a cylindric tube in the lower 2 mm., externally ferruginous-pubescent in the lower half, or on those parts forming the limb which are exposed in bud, those portions of the petals valvate, oblong, about 3 mm. long, each petal cleft into 2, oblong, glabrous lobes, the lobes truncate-rounded, inflexed in bud, 3 mm. long, 1.2 mm. wide, spreading at an angle of about 45° in anthesis. Stamens 5, alternate with the petals, inserted near the apex of the corolla-tube, their filaments 1 mm. long; anthers ovoid, somewhat acuminate and minutely apiculate, basifixed, 2-celled, about 1.3 mm. long, opening by lateral slits, the connectives stout, broad, narrowed upward. Disk O or very obscure. Ovary superior, globose, glabrous, 1-celled with 3 or 4 erect basal ovules; stigma sessile, broadly conical, somewhat sulcate, about 1 mm. in diameter. Fruit (not quite mature) oblong-ellipsoid, glabrous, 8 to 9 mm. long, 1-celled, 1-seeded, the pericarp rather thin, the seed somewhat fleshy, the calyx lobes persistent but not accrescent.

British North Borneo, Batu Lima, near Sandakan, and at Marutai, *Ramos 1454* (type), *Wood 453,* flowering in October and with immature fruits in June. Mr. Wood's specimen is labelled as 'coming from back of the mangrove swamps,' while Ramos notes it occurs in forests and in open places at low altitudes. This proposed new genus presents certain characters intermediate between *Icacinaceae* and *Olacaceae* and might with almost equal propriety be placed in either family. It is at once distinguished from all hitherto described genera in these families by its conspicuously cleft petals, the relatively large lobes being inflexed in bud and spreading at an angle of about 45° in flower. In its stamens being alternate with the petals it differs from most representatives of the *Olacaceae,* while in its erect basal ovules it differs from most or all of the *Icacinaceae.* I have placed it tentatively in the *Olacaceae.*

MENISPERMACEAE.

Juppia genus novum.

Sepala 3, ovata, valvata, concava, circiter ¼ connata. Petala 5, subcarnosa, valvata, libera, oblongo-lanceolata. Stamina 5, libera; filamenta brevissima; antherae subpeltatae, ellipticae, 1-locellatae, longitudinaliter dehiscentes. Flores ♀ et fructus ignotis.—Frutex cirrhosus, scandens, glaber vel subglaber. Folia integra, elliptica, basi 5-nervia; petiolus in laminae margine insertus. Paniculae amplissimae, pendulae, e trunco vel ramis vetustis ortae.

Juppia borneensis sp. nov.

Frutex scandens, cirrhosus, inflorescentiis eceptis glaber; foliis ellipticis, chartaceis, integris, subolivaceis, nitidis, 10 ad 15 cm. longis, basi rotundatis, 5-nerviis, apice breviter acuminatis apiculatisque, nervis supra basin utrinque circiter 3; inflorescentiis caulinis, pendulis, paniculatis, usque ad 60 cm. longis; floribus ♂ numerosis, breviter pedicellatis, 6 ad 7 mm. diametro, glabris, sepalis 3, ovatis, 2 mm. longis, usque ad ¼ connatis, concavis; petalis 5, oblongo-lanceolatis, leviter acuminatis, 3 ad 3.5 mm. longis, liberis; staminibus 5, liberis, filamentis brevissimis, antheris peltatim affixis, ellipsoideis, 1-locellatis, longitudinaliter dehiscentibus.

A scandent, diœcious, tendril-bearing, woody vine, glabrous except the very slightly and obscurely pubescent inflorescences, the stems terete, about 1 cm. diameter, somewhat wrinkled when dry and with scattered lenticels, the branchlets brownish, about 3 mm. in diameter. Leaves elliptic, chartaceous, entire, subolivaceous, somewhat shining, the upper surface minutely puncticulate, 10 to 15 cm. long, 5 to 10 cm. wide, the base rounded, 5-nerved, the inner pair of nerves extending beyond the middle of the leaf, the apex very shortly and abruptly acuminate, the acumen apiculate by the slightly excurrent midrib; lateral nerves above the basal one about 3 on each side of the midrib, ascending at an angle of about 45°, slender, distinct, the reticulations rather distinct; petioles 2.5 to 3 cm. long; tendrils simple, usually or always attached with the petioles, rather rigid, up to 9 cm. long. Panicles from the stems and branches below the leaves, pendulous, up to 60 cm. in length, the branches rather few, scattered, spreading, up to 17 cm. in length. Flowers racemosely arranged on the primary branches, solitary or in pairs, their pedicels about 3 mm. long. Male flowers yellow or yellowish-white, 6 to 7 mm. in diameter. Sepals 3, glabrous, ovate, valvate, 2 mm. long, united for about the lower ¼, concave, acute or obscurely apiculate, the buds globose and without reduced sepals or bracteoles. Petals 5, oblong-lanceolate, somewhat acuminate, valvate, glabrous, free, 3 to 3.5 mm. long, 2 mm. wide, somewhat thickened or fleshy. Stamens 5, free, alternate with the petals, the filaments very short, not exceeding 0.2 mm. in length; anthers peltately affixed, ellipsoid, 0.4 mm. long, 1-celled, dehiscing longitudinally by a single valve on the upper surface. Female flowers and fruits not known.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1593* (type), *1578*, November, 1920. In damp forests along streams at low altitudes. This proposed new genus and species distinctly resembles *Haematocarpus*, but does not appear to be closely allied to that genus and may not belong in the tribe *Triclisieae*. In the absence of female flowers and fruits it is difficult to decide its proper place in the family. Among the known genera of the family the present genus differs in its 3 sepals which are somewhat united below, in its 5 petals and 5 stamens,—in most genera the sepals, petals and stamens being in three's or in multiples of three's. This genus is dedicated to Mr. William O. Jupp, for long a resident of Sandakan, in appreciation of his interest in forwarding the field work in botany carried on by the Bureau of Science in co-operation with the Forestry Service of the Government of British North Borneo.

Tinospora Miers.

Tinospora glandulosa sp. nov.

Frutex scandens, glaber; foliis oblongis, subcoriaceis, nitidis, basi rotundatis vel obtusis, usque ad 12 cm. longis, nervis utrinque 7 vel 8, distinctis, subtus in axillis perspicue glanduloss; infructescentiis e nodis defoliatis, solitariis, anguste paniculatis, pedunculatis, usque ad 24 cm. longis, ramis primariis patulis inferioribus circiter 3 cm. longis; fructibus junioribus subellipsoideis, 5 mm. longis.

A glabrous vine, the older branches apparently fleshy when fresh, when dry dark reddish-brown and smooth except for the scattered conspicuous lenticels, the younger branches slender, grayish brown, lenticellate. Leaves shining, subcoriaceous, pale and of about the same color on both surfaces when dry, oblong, 9 to 12 cm. long, 3.5 to 5.5 cm. wide, slenderly acute-acuminate, base rounded or obtuse, 3-nerved, the lateral nerves extending from one-fourth to one-third the length of the lamina, those above the basal pair 6 or 7 on each side of the midrib, slender, distinct, the reticulations distinct on both surfaces, the axils of the primary nerves beneath with rather conspicuous glands (domatia); petioles slender, 3 to 4 cm. long. Infructescences lateral, solitary from leafless nodes, slender, narrowly paniculate, peduncled, up to 24 cm. long, the branches spreading, the lower ones 3 m. long, the upper shorter. Immature fruits about 5 mm. long, subellipsoid, narrowed at both ends, inequilateral, 2 or 3 developing from each flower.

British North Borneo, Sandakan, *Wood 939* October, 12, 1920. In bamboo forests at low altitudes. In vegetative characters and in general appearance this somewhat resembles the Philippine *Tinospora reticulata* Miers. It is not, however, very closely allied to that species, being very readily distinguished from this and its congeners by its differently shaped leaves and its more numerous lateral nerves.

Cyclea Arnott.

Cyclea caudata sp. nov.

Frutex scandens, inflorescentiis leviter pubescentibus exceptis glaber: foliis chartaceis vel subcoriaceis, lanceolatis vel oblongo-lanceolatis, 7 ad 11 cm. longis, basi late rotundatis, interdum angustissime peltatis, apice caudato-acuminatis apiculatisque, nervis paucis, reticulis utrinque distinctis; paniculis ♂ axillaribus, angustis, 10 ad 18 cm. longis; calycibus cupulatis, 1 mm. longis, breviter 4-lobatis; petalis omnibus connatis; antheris 4, capitulis 0.3 mm. diametro.

A slender vine entirely glabrous except the sparingly pubescent inflorescences, the stems terete, rather smooth, 2 to 3 mm. in diameter. Leaves chartaceous to subcoriaceous, lanceolate to oblong-lanceolate, 7 to 11 cm. long, 2 to 4 cm. wide, the base broadly rounded, often truncate, sometimes narrowly peltate, the midrib occasionally inserted 1 to 2 mm. from the margin, narrowed upward to the slenderly caudate-acuminate and apiculate apex, both surfaces olivaceous and somewhat shining when dry; basal nerves usually 2 pairs, the lateral ones above the base 2 or 3 on each side of the midrib, rather prominent, the primary reticulations lax, distinct on both surfaces; petioles 1.5 to 2.5 cm. long. Staminate inflorescences axillary, solitary, narrowly paniculate, 10 to 18 cm. long, sparingly pubescent, the primary branches few, distant, spreading, 1 to 1.5 cm. long. Calyx cup-shaped, about 1 mm. long, somewhat pubescent, shallowly 4-lobed. Corolla glabrous, cup-shaped, truncate, 0.5 mm. in diameter, the petals wholly united. Androphore glabrous, 0.8 mm. long, the anthers 4, forming a head about 0.3 mm. in diameter, transversely dehiscent.

Sarawak, Upper Baram, Selungo, *Major J. C. Moulton 87* (= *2835 Native Collector Bur. Sci.*), November 26, 1914. A species allied to *Cyclea elegans* King, of the Malay Peninsula, differing in its leaves being caudate-acuminate, the bases being rounded and not at all peltate or at most very narrowly peltate; in its inflorescences exceeding the leaves in length; and in its petals being wholly united into a truncate cup.

MAGNOLIACEAE.

Talauma Jussieu.

Talauma megalophylla sp. nov.

Arbor, partibus junioribus adpresse sordide brunneo-villosis, ramulis 1.5 cm. diametro; foliis permagnis, oblanceolatis, coriaceis, 45 ad 90 cm. longis, 12 ad 25 cm. latis, coriaceis, nitidis, tenuiter acuminatis, basi cuneatis, supra ad costam villosis, subtus leviter pilosis, nervis utrinque circiter 35, valde perspicuis, reticulis laxis; floribus 10 cm. longis, sepalis 3, crasse coriaceis, oblongis vel oblongo-ellipticis, 8 ad 9 cm. longis, extus dense villosis; petalis carnosis, glabris, quam sepalis paullo longioribus, in siccitate rugosis; carpellis numerosissimis, villosis; fructibus oblongo-ovoideis vel ellipsoideis, circiter 10 cm. longis, rhachibus 2.5 cm. diametro, carpellis immaturis lanceolatis, 4 cm. longis, lignosis, brunneis, partibus superioribus liberis, 1.5 ad 2 cm. longis.

A tree about 8 m. high, the ultimate branchlets terete, about 1.5 cm. in diameter, pale-brown, densely appressed-villous with soft, dirty-brown hairs. Leaves in general oblanceolate, 45 to 90 cm. long, 12 to 25 cm. wide, coriaceous, pale on both surfaces when dry, shining, the apex rather slenderly acuminate, narrowed below to the cuneate base, the upper surface usually conspicuously villous along the midrib, ultimately glabrous, the lower surface sparingly villous, the hairs pale, appressed, from somewhat enlarged bases; lateral nerves about 35 on each side of the midrib, very prominent on the lower surface, spreading, somewhat curved, arched-anastomosing, reticulations lax; petioles stout, much thickened below, 4 to 5 cm. long, densely villous. Flowers white, slightly fragrant, about 10 cm. long, their peduncles densely villous, about 1 cm. in diameter. Sepals 3, very thickly coriaceous, oblong-ovate to oblong or oblong-elliptic, obtuse, 8 to 9 cm. long, about 4 cm. wide, densely appressed-villous outside, the indumentum somewhat deciduous. Petals apparently very fleshy, dark-brown and rugose when dry, up to 10 cm. long. Carpels very numerous, in flower lanceolate, about 4 cm. long (not mature), woody, dark-brown, the fruit oblong-ovoid or ellipsoid, up to 10 cm. long, the rachis of the mature infructescences up to 2.5 cm. in diameter. Carpels lanceolate, about 4 cm. long (not mature), dark-brown, the indumentum more or less persistent, the free portions 1.5 to 2 cm. in length.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1509*, October, 1920. In damp forests at low altitudes. A species remarkable for its very large leaves, in this character somewhat approaching *Talauma gigantifolia* Miq. of Sumatra which is also recorded from Borneo. The present species, however, differs from Miquel's in very numerous characters, especially in its much longer, differently shaped, smooth leaves, the reticulations being lax and not nearly as prominent as in *T. gigantifolia.*

Talauma borneensis sp. nov.

Arbor circiter 7 m. alta, pedunculis sepalisque adpresse villosis exceptis glabra; ramis tenuibus, laevibus, ramulis 3 mm. diametro; foliis chartaceis, oblongo-ellipticis vel oblongis, 12 ad 28 cm. longis, perspicue acuminatis, basi acutis, utrinque brunneo-olivaceis, nitidisque, nervis utrinque circiter 15, cum reticulis utrinque conspicuis; floribus circiter 5 cm. longis, pedunculo adpresse villoso, sepalis deciduis, extus adpresse villosis, petalis circiter 8, oblongis vel oblongo-obovatis, circiter 5 cm. longis et 2 cm. latis, 3 interioribus valde incrassatis; carpellis circiter 25, lineari-lanceolatis, glabris;

fructibus oblongis, circiter 6 cm. longis, 2.5 cm. diametro, atrobrunneis, glabris, carpellis connatis, verruculosis, circiter 2.5 cm. longis.

A tree about 7 m. high, glabrous except the densely appressed-pubescent apical portions of the peduncles and the appressed-villous sepals. Branches slender, brown, rather smooth, the ultimate ones about 3 mm. in diameter. Leaves chartaceous, oblong-elliptic to oblong, 12 to 28 cm. long, 4.5 to 8 cm. wide, conspicuously acuminate, the base acute, brownish-olivaceous and shining on both surfaces; lateral nerves about 15 on each side of the midrib, curved, distinct on both surfaces as are the rather close reticulations; petioles 1 to 2 cm. long, thickened in the lower one-half. Peduncles in flower about 5 cm. long, densely appressed-pubescent with pale hairs, the indumentum deciduous on the older peduncles. Flowers white, about 5 cm. long, the sepals apparently 2, deciduous, rather densely appressed-villous with pale hairs on the back. Petals at least 8, oblong to oblong-obovate, glabrous, about 5 cm. long and 2 cm. wide, apparently somewhat fleshy, brown when dry, rounded, the inner three much thicker than the outer ones. Anthers linear-lanceolate, 12 to 13 mm. long, acuminate. Carpels about 25, linear-lanceolate, glabrous except near their apices where they are sparingly ciliate, the free portions in flower 8 to 10 mm. long. Fruit oblong, about 6 cm. long, 2.5 cm. wide, dark-brown when dry, the individual carpels cohering except at their very apices, verrucose, glabrous, the tips spreading, stout, 2 to 3 mm. long.

British North Borneo, Sibuguey, near Sandakan, *Ramos 1533*, November, 1920. In damp forests at low altitudes. A species belonging in the group with *Talauma mutabilis* Blume, and very closely approximating in vegetative characters to *T. kunstleri* King, differing from both species in its much larger flowers and fruits.

ANONACEAE.

Artabotrys R. Brown.

Artabotrys clementis sp. nov.

Frutex scandens, glaber (floribus ignotis), ramis ramulisque teretibus in siccitate atro-purpureo-brunneis, leviter rugosis; foliis chartaceis, nitidis, oblongis vel anguste oblongo-obovatis, 10-20 cm. longis, perspicue acuminatis, basi obtusis, nervis utrinque circiter 12, subtus perspicuis, reticulis utrinque subdensis, perspicuis; fructibus longe pedicellatis, ellipsoideis vel oblongo-ellipsoideis, in siccitate atro-brunneis, usque ad 4 cm. longis et 2.3 cm. diametro, glabris, seminibus usque ad 8, 2-seriatis.

A scandent vine entirely glabrous (flowers unknown), the branches and branchlets slender, terete, dark-brown, somewhat wrinkled when dry, the ultimate branchlets about 1.5 mm. in diameter. Leaves chartaceous, oblong to narrowly oblong-obovate, 10 to 20 cm. long, 4 to 7 cm. wide, the apex rather slenderly and sharply acuminate, base obtuse, the upper surface pale or brownish when dry, the lower pale-brownish, both surfaces shining; lateral nerves about 12 on each side of the midrib, distinct on the lower surface, somewhat curved, obscurely anastomosing, the reticulations rather close and distinct on both surfaces; petioles 3 to 7 mm. long. Peduncles of the infructescences 1 to 2 cm. long, rather stout, the torus woody, up to 1.5 cm. in diameter: fruits 5 to 20, ellipsoid to oblong-ellipsoid, dark-brown when dry, glabrous, rounded at both ends, up to 4 cm. long, 2.5 cm. in diameter; seeds 2-seriate, up to 8 in each fruit, or in those cases where the fruit is imperfectly developed and globose, only 1.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1667* (type), 1480, October and November, 1920; Jesselton, *Mrs. Clemens 9670*, December, 1915. In thickets along trails and in forests at low altitudes. A species well characterized within the genus by being, so far as known, entirely glabrous; it is probable that the flowers may be more or less pubescent. It is manifestly allied to *Uvaria lurida* Hook. f. & Th., but the seeds are 2-seriate, not 1-seriate as in the latter species.

Artabotrys borneensis sp. nov.

Frutex scandens, inflorescentiis exceptis glaber vel subglaber; foliis chartaceis, ellipticis vel elliptico-oblongis, pallide olivaceis, nitidis, 10-13 cm. longis; utrinque subaequaliter angustatis, basi acutis, apice perspicue obtuseque acuminatis; nervis utrinque circiter 8, plerumque patulis, perspicuis; inflorescentiis oppositifoliis, plerumque 1-floris; pedunculis curvatis, compressis, 1-1.5 cm. longis: floribus 4 cm. longis; sepalis ovatis, acuminatis, leviter pubescentibus vel vetustioribus glabris, exterioribus oblongo-ellipticis, 1.5 cm. latis, obtusis; carpellis circiter 12, glabris, stylis crasse clavatis, obtusis; disco dense ferrugineo-hirsuto.

A scandent shrub glabrous or nearly so except for the inflorescences. Branches and branchlets slender, terete, black when dry, the ultimate branchlets about 1 mm. in diameter, more or less ferruginous-pubescent at their apices. Leaves chartaceous, elliptic to elliptic-oblong, pale-olivaceous, shining, 10 to 13 cm. long, 4 to 6 cm. wide, subequally narrowed to the acute base and to the conspicuously blunt-acuminate apex, the acumen usually about 1 cm. long; lateral nerves about 8 on each side of the midrib, mostly spreading, arched anastomosing, rather prominent, the reticultions lax and distinct on both surfaces; 4 to 5 mm. long. Inflorescences on the ultimate branchlets, leaf-opposed, usually only 1-flowered, the peduncles stout, strongly curved, compressed, 1 to 1.5 cm. long, sparingly appressed-ferruginous-pubescent. Flowers 4 to 4.5 cm. long, their pedicels stout, thickened upward, glabrous or nearly so, about 8 mm. long. Sepals coriaceous, ovate, prominently acuminate, black when dry, glabrous or very slightly pubescent, about 6 mm. long, 5 mm. wide. Petals thickly coriaceous, all broad, flat, sparingly pubescent on both surfaces or ultimately glabrous or nearly so; outer three petals oblong-ovate to ovate, acute or obtuse, 4 to 4.5 cm. long, 2 to 2.3 cm. wide, the concave basal part rather conspicuously appressed-ferruginous-pubescent outside, 5 to 7 mm. long and wide; inner petals oblong-elliptic, 3.5 to 4 cm. wide, somewhat narrowed below to the concave basal part which is 6 to 7 mm. long, 3 mm wide. Anthers numerous, 2.5 mm. long, the connectives truncate-rounded. Carpels about 12, glabrous, narrowly oblong, narrowed upward, 2 mm. lang; style thicker than the ovary, equalling it in length, thickly club-shaped, the apex obtuse. Disk densely ferrugious-hirsute.

British North Borneo, Batu Lima, *Bur. Sci. 1366 Ramos*, October, 1920. In damp forests at low altitudes. The striking characters of this species are its large, broad petals and its usually 1-flowered inflorescences.

Artabotrys trichopetalus sp. nov.

Frutex scandens, ramis rugosis, glabris, ramulis leviter pubescentibus; foliis coriaceis, oblongo-ellipticis, 10-17 cm. longis, apice obtuse acuminatis, basi plerumque rotundatis, supra glabris, castaneis, subtus brunneis, leviter longe ciliatis, nervis utrinque 9 vel 10, subtus perspicuis; inflorescentiis lateralibus, paucifloris, pedunculis crassis, teretibus, 1.5 cm. longis, subglabris; floribus circiter 3 cm. longis, pedunculis 2-bracteatis, bracteis elliptico-ovatis, 1 cm. longis, extus dense ciliatis, intus glabris; sepalis petalisque dense ciliatis pubescentibusque; sepalis 12 mm. longis, acuminatis; petalis exterioribus planis, 10 mm. latis, oblongo-ellipticis, interioribus lanceolatis, 5 vel 6 mm. latis, crassissimis; antheris 3 mm. longis, connectivo crassissimo, obtuso, 1-1.5 mm. longo; carpellis circiter 25, glabris.

A woody vine, the branches grayish-brown, glabrous, 3 to 4 mm. in diameter, rugose when dry. Leaves coriaceous oblong-elliptic, 10 to 17 cm. long, 4 to 7 cm. wide, the upper surface castaneous when dry, glabrous, somewhat shining, the lower surface brown, more or less ciliate with long, rather pale, subappressed hairs, the individual hairs often 2 to 3 mm. in length and more numerous on the midrib and nerves, otherwise widely scattered; apex blunt-acuminate, base usually rounded sometimes acute; lateral nerves 9 or 10 on each side of the midrib, somewhat ascending arched-anastomosing, prominent on the lower surface, the reticulations lax, rather distinct; petioles 5 to 9 mm. long, when young more or less pubescent, ultimately glabrous. Inflorescences lateral, from the branches among or below the leaves, few-flowered, the peduncles very stout, strongly curved and terete, up to 1.5 cm. long, glabrous or nearly so, rugose. Flowers greenish, about 3 cm. long, their pedicels up to 1.5 cm. long, very densely ciliate with long ferruginous hairs, each supplied with 2 conspicuous, elliptic-ovate, coriaceous, somewhat acuminate bracts about 1 cm. long which are densely ciliate and pubescent outside, glabrous inside. Sepals coriaceous, ovate-lanceolate, acuminate, about 12 mm. 6 to 17 mm. wide, densely appressed-ciliate and pubescent outside, inside appressed-pubescent except in the lower part which is glabrous. Petals thickly coriaceous, all densely pubescent on both surfaces and supplied with numerous, subappressed, elongated, ciliate hairs, the indumentum pale-brownish or grayish; the outer three petals about 3 cm. long, 12 mm. wide, the basal concave part broadly ovate, 6 to 8 mm. wide and long, the flattened portions oblong-elliptic, acute, somewhat narrowed below; inner three petals lanceolate, up to 2.5 cm. long, 5 to 6 mm. wide, very much thickened, the arched basal part 6 to 7 mm. long, 5 mm. wide, glabrous inside, the free portions narrowly lanceolate, acuminate. Anthers numerous, 3 mm. long, the connectives much thickened, 1 to 1.5 mm. long, obtuse. Carpels about 25, oblong, curved, glabrous, narrowed upward, 1.8 to 2 mm. long; style as long as the carpels, club-shaped.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1465*, October, 1920. In damp forests at low altitudes. A species remarkable for its indumentum and especially for its very densely pubescent and ciliate sepals and petals, as well as for its conspicuous, elliptic, 1 cm. long, ciliate and pubescent bracts. The indumentum on the lower surface of the leaves is widely scattered, consisting chiefly of slender, elongated, subappressed hairs, attaining 2 to 3 mm. in length

Artabotrys trigyna sp. nov

Frutex scandens, floribus exceptis glaber vel subglaber; ramis ramulisque tenuibus, in siccitate nigris vel atro-brunneis, ramulis junioribus parcissime adpresse pubescentibus; foliis oblongis vel oblongo-ellipticis, 10-15 cm. longis 2.5-5 cm. latis chartaceis vel subcoriaceis, glabris, utrinque subaequaliter angustatis, basi acutis, apice perspicue acuminatis, nitidis, brunneo-olivaceis, nervis utrinque 12-15, tenuibus, distinctis; inflorescentiis oppositifoliis, breviter pedunculatis. parce pubescentibus, teretibus vel obscure compressis; floribus 2.5-3 cm. longis, sepalis parcissime pubescentibus, ovatis, acuminatis, 6 mm. longis petalis basi concavis 4 mm. diametro, dense subferrugineo-pubescentibus, supra linearibus, circiter 1 mm. latis, parce pubescentibus; carpellis 3, ovoideis, glabris, stigmate circiter 1 mm. diametro.

A scandent shrub, nearly glabrous except the flowers. Branches and branchlets slender, terete, dark-brown or nearly black when dry, the ultimate branchlets very sparingly appressed-pubescent. Leaves oblong to oblong-elliptic, chartaceous or subcoriaceous, glabrous, shining, brownish-olivaceous when dry, 10 to 15 cm. long, 2.5 to 5 cm. wide, subequally narrowed to the acute base and the conspicuously acuminate apex; lateral nerves 12 to 15 on each side of the midrib, spreading, slender, distinct on both surfaces, arched-anastomosing, the reticulations lax; petioles 3 to 4 mm. long. Inflorescences leaf-opposed sparingly appressed-pubescent, the peduncles about 1 cm. long, at first nearly straight, ultimately curved, terete or slightly compressed, each bearing about 5 flowers. Flowers yellow, about 2.5 to 3 cm. long, the subtending bracteoles oblong to oblong-ovate, deciduous, about 2.5 mm. long, the pedicels nearly glabrous, thickened upward, about 1 cm. long. Sepals coriaceous, ovate, narrowed upward to the conspicuously acuminate apex, very sparingly appressed-pubescent of nearly glabrous, about 6 mm. long, 5 mm. wide. Petals subequal, the concave bases densely appressed-pubescent on both surfaces, about 4 mm. long and wide, then abruptly contracted and linear, the linear part often curved, sparingly appressed-pubescent, thickened, obtuse, about 1 mm. wide, 2.5 cm. long. Anthers numerous, 1.5 to 1.8 mm. long, narrowed below, the connectives thickened, truncate and minutely pubescent at the apex. Carpels 3, ovoid, glabrous; styles about 1 mm. long, the stigmas expanded, disciform, about 1 mm. in diameter; disk densely ferruginous-pubescent. Fruits ellipsoid, dark-brown smooth, glabrous, sessile, about 1 cm. long; seeds 2, collateral.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1178* (type), *1875*, October and December, 1920. In damp forests at low altitudes. A species belonging in the group with *Artabotrys suaveolens* Blume, and apparently most closely allied to *A. maingayi* Hook. f. and Th. and *A. gracilis* King, differing from all of these in numerous details in floral structure.

Fissistigma Griffith.

Fissistigma clementis sp. nov.

Frutex scandens, partibus junioribus foliisque subtus breviter adpresse ferrugineo-pubescentibus; ramis glabris; foliis oblongo-ellipticis, chartaceis, 4-8 cm. longis, acutis vel acuminatis, basi rotundatis vel obtusis, supra olivaceis, glabris, nitidis, subtus, brunneis et minute adpresseque ferrugineo-pubescentibus; nervis lateralibus utrinque 8-10, tenuibus; floribus axillaribus, solitariis, circiter 2.3 cm. longis; calyce triangulari, 4 vel 5 mm. diametro; petalis crassissimis, exterioribus oblongo-lanceolatis, obtuse acuminatis, 8-10 mm. latis, extus minute adpresseque pubescentibus, interioribus ovatis, 4 mm. longis, 3.5 mm. latis, acutis; carpellis plusminusve 10, glabris.

A scandent shrub, the younger parts, lower surface of the leaves, and flowers more or less ferruginous-pubescent. Branches and branchlets terete, slender, dark-brown or nearly black when dry, the former glabrous the latter more or less appressed-pubescent with shining ferruginous hairs, the very tips of the branchlets densely ferruginous- or cupreous-pubescent. Leaves oblong-elliptic, chartaceous, 4 to 8 cm. long, 2 to 3 cm. wide, the apex acute or acuminate, the base rounded or broadly acute, the upper surface olivaceous, glabrous, the lower surface brownish and minutely appressed-ferruginous-pubescent, the hairs more or less shining; lateral nerves 8 to 10 on each side of the midrib, slender, obscurely anastomosing, not prominent; petioles somewhat pubescent or ultimately glabrous, 4 to 5 mm. long. Flowers yellow, axillary, solitary, about 2.3 cm. long, their pedicels up to 5 mm. long, somewhat pubescent and with 1 or 2 small bracteoles at or near the base. Calyx triangular, 4 to 5 mm. in diameter, somewhat ferruginous-pubescent, the angles acute. Petals much thickened, the outer 3 oblong-lanceolate, blunt-acuminate, 2 to 2.3 cm. long, 7 to 8 mm. wide, minutely appressed-pubescent with shining, ferruginous, short hairs, keeled inside, hollowed at the base; inner petals ovate, about 4 mm. long, 3.5 mm. wide, acute, somewhat pubescent. Anthers numerous, 1 to 1.2 mm. long, their connectives oblong-truncate. Carpels about 10, inequilateral, oblong, glabrous, 1 to 1.2 mm. long; styles about 0.7 mm. long. Very young fruits globose, glabrous, about 4 mm. in diameter, their pedicels 5 mm. in length.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1474* (type), October, 1920, in damp forests at low altitudes; Khota Balud to Kibayo, trail to Mount Kinabalu, *Mrs. Clemens 9766*, October, 1915. A species in vegetative characters closely approximating to *Fissistigma elegans* (Wall.) Merr., but differing in numerous floral characters.

Oxymitra Blume.

Oxymitra grandifolia sp. nov.

Frutex scandens, ramulis et petiolis et subtus foliis ad costam nervosque perspicue ferrugineo-pubescentibus; foliis magnis, chartaceis, oblongo-ellipticis vel oblongo-obovatis, 25-50 cm. longis, apice plerumque late rotundatis, basi rotundatis, distincte cordatis, nervis utrinque 18-25, perspicuis, supra nitidis, costa excepta glabris, utrinque brunneis; infructescentiis extra-axillaribus, 4 vel 5 cm. diametro, fructibus numerosis, ellipsoideis, apiculatis, ferrugineo-pubescentibus, 10-12 mm. longis.

A scandent vine, the branchlets, infructescences and leaves on the lower surface conspicuously ferruginous-pubescent. Branches brown, about 5 mm. in diameter, wrinkled when dry, ferruginous-pubescent or glabrous, the branchlets very densely pubescent. Leaves chartaceous, oblong-obovate to oblong-elliptic, 25 to 50 cm. long, 11 to 15 cm. wide, the apex usually broadly rounded or sometimes very broadly and obscurely blunt-acuminate, the base rounded and usually shallowly cordate, the upper surface olivaceous, smooth, shining, glabrous or the midrib somewhat pubescent, the lower surface brown, rarely slightly glaucous, sparingly ferruginous-pubescent on the midrib, nerves, and reticulations; lateral nerves 18 to 25 on each side of the midrib, somewhat ascending, slightly curved, anastomosing, very prominent on the lower surface, the primary reticulations subparallel, distinct; petioles stout, pubescent, 6 to 18 mm. long. Infructescences extra-axillary, their peduncles stout, ferruginous-pubescent, 1 to 1.5 cm. long, the torus slightly thicker than the peduncle, ferruginous-pubescent. Fruits numerous, ellipsoid, yellowish-white when fresh, brown when dry, 10 to 12 mm. long, more or less ferruginous-pubescent, apiculate, their pedicels pubescent, 1 to 1.5 cm. in length.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1910* (type), *1911, 1170,* October and December, 1920. In damp forests at low altitudes. A species belonging in the group with *Oxymitra calycina* King and apparently most closely allied to *O. philippinensis* Merr., from which it is distinguished by its larger, more numerously nerved leaves, which are brown, not glaucous beneath, and in its much more conspicuous and longer indumentum.

Oxymitra acuminata sp. nov.

Frutex scandens, ramulis petiolisque dense adpresse ferrugineo-pubescentibus; ramis glabris, nigris, ramulis 1.5 mm. diametro; foliis chartaceis, oblongo-ellipticis vel anguste oblongo-obovatis, 13-18 cm. longis, perspicue crasseque acuminatis, basi rotundatis, plerumque leviter cordatis, utrinque brunneis, nitidis, supra glabris vel ad costam nervosque parce pubescentibus, subtus haud glaucescentibus, vetustioribus glabris; nervis utrinque 10-15, subtus valde perspicuis, reticulis utrinque distinctis; infructescentiis in ramulis ultimis axillaribus extra-axillaribusque, circiter 4 cm. diametro, fructibus numerosis, ellipsoideis, apiculatis, 1 cm. longis, leviter pubescentibus, glabrescentibus.

A woody vine, the branchlets and petioles densely appressed-ferruginous-pubescent, the branches slender, terete, glabrous, nearly black when dry, 2 to 3 mm. in diameter, the ultimate branchlets 1.5 mm. in diameter. Leaves chartaceous, oblong-elliptic to narrowly oblong-obovate, 13 to 18 cm. long, 4.5 to 6 cm. wide, the apex conspicuously and rather stoutly acuminate, the acumen up 2 cm. long, blunt, the base rounded and usually slightly cordate, the upper surface brown or brownish-olivaceous, strongly shining, glabrous or nearly so, or the midrib and lateral nerves sparingly pubescent, the lower surface paler than the upper, brown, not at all glaucous, sparingly pubescent on the midrib and nerves, ultimately entirely glabrous; lateral nerves 10 to 15 on each side of the midrib, somewhat curved-anastomosing, very prominent on the lower surface, the primary reticulations subparallel and distinct on both surfaces; petioles 5 to 8 mm. long. Infructescences axillary and extra-axillary on the ultimate branchlets, their peduncles 1.5 to 2 cm. long, ferruginous-pubescent. Fruits numerous ellipsoid, about 1 cm. long, apiculate, sparingly pubescent or nearly glabrous, their pedicels somewhat thickened upward, pubescent, about 1 cm. long.

British North Borneo, Sibuga and Batu Lima, *Ramos 1567* (type), *1171,* October and November, 1920. In damp forests along small streams at low altitudes.

Goniothalamus Blume.

Goniothalamus stenophyllus sp. nov.

Arbor, floribus exceptis glabra; ramis ramulisque tenuibus; foliis lineari-lanceolatis, chartaceis, olivaceis, nitidis, 20-30 cm. longis, 1.5-2.5 cm. latis, basi acutis vel subrotundatis, apice acuminatis, nervis utrinque circiter 23, supra impressis, subtus perspicuis, arcuato-anastomosantibus, reticulis laxis, obscuris; floribus caulinis vel in ramis vetustioribus solitariis vel fasciculatis, circiter 2.3 cm. longis, petalis exterioribus parcissime pubescentibus, lanceolatis, 7 vel 8 mm. latis, interioribus crassissime coriaceis, ovato-lanceolatis, utrinque pubescentibus, 10-12 mm. longis; antheris 2.5 mm. longis, connectivo apiculato; carpellis numerosis, oblongis, cupreo-hirsutis, 1-ovulatis.

A shrub or small tree entirely glabrous except the flowers. Branches and branchlets slender, pale when dry, terete or the branchlets somewhat enlarged and slightly compressed at the nodes. Leaves chartaceous, olivaceous and shining on both surfaces, linear-lanceolate 20 to 30 cm. long, 1.5 to 2.5 cm. wide, narrowed upward to the acuminate apex, the base rather abruptly acute, sometimes rounded; lateral nerves impressed on the upper surface, very prominent on the lower surface, the latter about 23 on each side of the midrib, straight or somewhat curved, anastomosing directly with the somewhat arched, equally distinct, submarginal nerves, the reticulations lax, obscure. Flowers cauline or on the larger branches below the leaves, solitary or fascicled, about 2.3 cm. long, their pedicels pubescent, 3 to 4 mm. in length. Sepals ovate, prominently acuminate, slightly pubescent, obscurely nerved, about 6 mm. long, 4.5 mm. wide. Outer petals lanceolate, about 2.3 cm. long, 7 to 8 mm. wide, acuminate, slightly pubescent; inner petals much thickened, ovate-lanceolate, about 12 mm. long, blunt-acuminate, pubescent, the upper portion of the cone triangular. Carpels many, oblong, 1-ovulate, 1.5 mm. long, appressed-pubescent; styles elongated, pubescent, 3 to 3.5 mm. long; stigmas somewhat expanded, not lobed nor toothed. Anthers oblong, 2.5 mm. long, their connectives apiculate.

Sarawak, Siol, *Native collector 2423*, February to June, 1914, the flowers indicated as yellow. A very strongly marked species readily recognizable by its chartaceous, linear-lanceolate, prominently nerved leaves, the midrib, lateral and marginal nerves being impressed on the upper surface and very prominent on the lower surface.

Goniothalamus nitidus sp. nov.

Arbor circiter 7 m. alta, ramulis junioribus plus minusve cupreo- vel castaneo-pubescentibus, ramis glabris; foliis olivaceis, utrinque nitidis, supra glabris, subtus glabris vel parce pubescentibus, chartaceis, oblongis vel oblongo-ellipticis, 22-30 cm. longis, apice abrupte obtuseque acuminatis, basi acutis, nervis

utrinque 17-20, subtus perspicuis, arcuato-anastomosantibus; floribus fasciculatis, caulinis vel in ramis vetustioribus, pedicellatis, plusminusve 6.5 cm. longis, leviter pubescentibus; sepalis orbiculari-ovatis, 1 cm. diametro, reticulatis; petalis exterioribus lanceolatis, longe acuminatis, 1.5-2 cm. latis, interioribus calyptratis, 1 cm. longis; carpellis numerosis, 1- vel 2-ovulatis, hirsutis, stylis 3 mm. longis, glabris, stigmate 2-lobato, lobis subflabellatis; fructibus oblongo-obovoideis, rugosis, glabris, circiter 2 cm. longis; seminibus 1, rariter 2.

A tree about 7 m. high, the very young branchlets more or less cupreous- or castaneous-pubescent, the flowers also somewhat pubescent. Branches dark-colored when dry, glabrous. Leaves olivaceous, shining on both surfaces, oblong to oblong-elliptic, 22 to 30 cm. long, 6 to 10 cm. wide, chartaceous, the apex abruptly and obtusely acuminate, the base acute, the upper surface glabrous, the lower surface sparingly pubescent, ultimately glabrous or nearly so; lateral nerves 17 to 20 on each side of the midrib, prominent on the lower surface, nearly straight, anastomosing directly with more or less arched marginal nerves 3 to 7 mm. from the edge of the leaf; the marginal nerves as prominent as the lateral ones, the reticulations subparallel, slender, rather lax; petioles 1 to 1.5 cm. long, slightly pubescent, ultimately glabrous. Flowers dark-red or reddish-brown, fascicled on the branches below the leaves and on the trunk, about 6.5 cm. long, their pedicels dark-brown when dry, sparingly ferruginous pubescent, 1.5 to 2 cm. long, each subtended by several ovate or oblong-ovate densely pubescent bracts 2 to 2.5 mm. in length. Sepals orbicular-ovate, nearly free, about 1 cm. in diameter, rounded or very shortly and obtusely acuminate, somewhat pubescent and distinctly nerved. Outer three petals lanceolate, 6 to 6.5 cm. long, 1.5 to 2 cm. wide, somewhat narrowed below, greatly narrowed upward to the rather slenderly but obtusely acuminate apex, sparingly appressed-pubescent on both surfaces, brown when dry, with a distinct midrib and several slender lateral nerves; inner three petals connivent, about 2.3 cm. long, 1 cm. wide, pubescent externally, glabrous inside, the lower surface of the cone somewhat inflated, then contracted, the upper part sharply triangular. Stamens very numerous, oblong, 3.5 mm. long, the connectives apiculate. Carpels many, oblong, inequilateral, 1.5 mm. long, pubescent, 1- or 2-ovulate; styles about 3 mm. long, glabrous, thickened upward, the stigma somewhat 2-lobed, the lobes more or less flabellate. Fruits oblong-ovoid, brown when dry, rugose, glabrous, about 2 cm. long, the apex rounded, base acute, the pedicels sparingly pubescent, their apices somewhat triangular. Seeds 1 or 2, obovoid, compressed, about 1.5 cm. long.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1668* (type), *1724*, *1276*. On steep forested ridges and along small streams in forests at low altitudes. A species apparently allied to *Goniothalamus fasciculatus* Boerl., from which it differs in its chartaceous, abruptly an shortly obtuse-acuminate leaves, orbicular-ovate and distinctly nerved sepals, and in its larger flowers, the external petals not caudate-acuminate, the internal petals much larger and up to 2.3 cm in length.

Goniothalamus dolichocarpus sp. nov.

Frutex 1 ad 3 m. altus, floribus exceptis glaber; foliis chartaceis vel subcoriaceis, oblongo-lanceolatis vel oblongo-oblanceolatis vel oblongo-ellipticis, in siccitate utrinque griseis et minutissime verruculosis, 25-40 cm. longis, 7-12 cm. latis, obtuse acuminatis, basi acutis vel subrotundatis, nervis utrinque 15-30, supra leviter impressis, subtus perspicuis, arcuato-anastomosantibus; floribus caulinis, plerumque solitariis, 3 cm. longis, petalis coriaceis, cinereo-pubescentibus, exterioribus oblongo-lanceolatis, 8-10 mm. latis, interioribus conniventibus, 2.2 cm. longis; antheris 3.5-4 mm. longis, connectivo rostrato; carpellis circiter 10, oblongis, 5- vel 9-ovulatis, stigmate truncato; fructibus cylindraceis, 6-11 cm. longis, 1.5-2 cm. diametro, glabris, seminibus 4-9.

A shrub 1 to 3 m. high, the trunk 1 to 2.5 cm. in diameter, glabrous except the flowers, branches grayish or brownish, rather smooth, terete, the ultimate ones 2 to 3 mm. in diameter. Leaves chartaceous to subcoriaceous, oblong-lanceolate to oblong-oblanceolate or oblong-elliptic, grayish and shining on both surfaces when dry and usually minutely verruculose, 25 to 40 cm. long, 7 to 12 cm. wide, obtusely acuminate, the base acute to somewhat rounded; lateral nerves 15 to 30 on each side of the midrib, slightly impressed on the upper surface, conspicuous on the lower surface, arched-anastomosing, forming a more or less looped marginal nerve, the reticulations lax, not prominent; petioles 1.2 to 2 cm. long. Flowers chiefly from the trunk and larger branches below the leaves, sometimes axillary, solitary, about 3 cm. long, greenish-white, the pedicels about 1.5 cm. long, the basal bracteoles triangular, pubescent, about 2 mm. long. Calyx about 1.3 cm. in diameter, the lobes coriaceous, ovate, conspicuously acuminate, somewhat pubescent, about 7 mm. long. Petals coriaceous, the outer three lanceolate to oblong-lanceolate, somewhat pubescent on both surfaces, about 3 cm. long, 8 to 10 mm. wide, narrowed upward, slightly acuminate; inner three petals oblong-lanceolate, cinereous-pubescent on both surfaces except at the vaulted base inside, 2.2 cm. long, 8 mm. wide, obtuse, the base slightly vaulted and distinctly clawed, the claw stout, 4 to 5 mm. long. Stamens numerous, 3.5 to 4 mm. long, the connectives rostrate. Carpels about 10, oblong, pubescent, 3 mm. long, the glabrous style equalling the carpels; stigma truncate; ovules 5 to 9. Fruits cylindric, 2 to 4 on each peduncle, yellow when fresh, dark-brown or gray when dry, glabrous, 6 to 11 cm. long, 1.5 to 2 cm. in diameter; seeds 4 to 9.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1259, 1623* (type), *1654, 1879,* October, November, and December, 1920. In thickets and in forests along small streams at low altitudes, locally known as *babancaon.* A remarkable species on account of the small size of the plant; its elongated leaves which in color and texture resemble those of *Goniothalamus macrophyllus* Hook. f. and Th., its usually solitary and chiefly cauline flowers; its numerous ovules; and its greatly elongated, cylindric, 4- to 9-seeded fruits. In its numerous ovules it transcends the limits of the genus *Goniothalamus*, but unmistakably belongs in this group.

Polyalthia Blume.

Polyalthia tenuipes sp. nov.

Frutex 3 ad 4 m. altus, ramulis leviter pubescentibus; foliis breviter petiolatis, oblongo-ellipticis, chartaceis vel subcoriaceis, glabris, 18-30 cm. longis, 5-10 cm. latis, acuminatis, basi obtusis vel subrotundatis, symmetricis, leviter auriculato-cordatis, supra castaneis vel brunneo-olivaceis, nitidis, subtus pallidioribus vel brunneis, nervis utrinque 15-17, subtus valde perspicuis, arcuato-anastomosantibus, nervis secundariis et reticulis distinctis; infructescentiis axillaribus, longissime pedunculatis, pedunculo 10-20 cm. longo; fructibus ellipsoideis, 1 cm. longis, perspicue apiculatis, parcissime hirsutis, castaneis vel brunneis, pedicellis 1.5-2 cm. longis.

A shrub 3 to 4 m. high, the young branchlets slightly pubescent, the older branches brown or dark-brown when dry. Leaves shortly petioled, oblong-elliptic, 18 to 30 cm. long, 4.5 to 11 cm. wide, chartaceous or subcoriaceous, glabrous, the apex shortly acuminate, the base obtuse or somewhat rounded, symmetrical, slightly auriculate-cordate, the upper surface castaneous or brownish-olivaceous, smooth, shining, the lower surface paler, usually brownish; lateral nerves 15 to 17 on each side of the midrib, very prominent on the lower surface, arched-anastomosing, the reticulations lax, distinct; petioles stout, 5 mm. long or less. Flowers unknown. Fruiting peduncles axillary, slender, 10 to 20 cm. long, glabrous o r slightly pubescent, the torus subglobose, up to 7 mm. in diameter, more or less ferruginous-hirsute. Fruits usually numerous, up to 30 on each peduncle, ellipsoid, about 1 cm. long, red when fresh, dark-brown when dry, very slightly appressed-hirsute, distinctly apiculate, their pedicels 1.5 to 2 cm. long, sparingly appressed-pubescent.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1501* (type), *1323, 1285, 1931,* October and November 1920; *Wood 962,* October, 1920. In damp forests at low altitudes. A species apparently most closely allied to *Polyalthia longipes* (Miq.) Koord. and Val. of Java, but differing from this and from its ally, *P subcordata* Blume, in its more numerously nerved leaves which are symmetrical, not inequilateral at the base, its much longer peduncles, and its apiculate fruits.

Polyalthia xanthopetala sp. nov.

Abor 9 vel 12 m. alta, ramulis dense ferrugineo-pubescentibus; foliis oblongis vel late oblongo-oblanceolatis, 18-25 cm. longis, subcoriaceis, nitidis, brunneo-olivaceis, costa utrinque pubescentibus, acuminatis, basi late acutis vel subrotundatis, nervis utrinque circiter 13, subtus perspicuis; floribus 7 cm. longis, fasciculatis, pedicellatis, caulinis et in ramis vetustioribus; petalis subaequalibus, lanceolatis, circiter 7 cm. longis, 10-12 mm. latis, acuminatis, leviter pubescentibus; carpelis numerous, oblongis, pubescentibus, 1-ovulatis; fructibus subglobosis vel ovoideis, 2-2.5 cm. diametro, dense pubescentibus.

A tree 8 to 10 m. high, the branchlets slender, densely ferruginous-pubescent, the ultimate ones 1.5 mm. in diameter. Branches rugose when dry, glabrous, dark-colored. Leaves oblong to broadly oblong-lanceolate, subcoriaceous, 18 to 25 cm. long, 4 to 8 cm. wide, rather conspicuously acuminate, base broadly acute to somewhat rounded, the upper surface olivaceous, shining, glabrous except for the pubescent midrib, the lower surface somewhat paler, glabrous, or the midrib usually somewhat pubescent; lateral nerves about 13 on each side of the midrib, prominent on the lower surface, somewhat curved, scarcely anastomosing, the reticulations rather close, slender; petioles 5 to 10 mm. long, ferruginous-pubescent, in age glabrous. Flowers yellow, about 7 cm. long, fascicled on the trunk and on the branches below the leaves, few in a fascicle, their pedicels densely ferruginous-pubescent, 1.5 to 2.5 cm. long. Sepals triangular-ovate, acute, pubescent, 5 to 6 mm. long. Petals subequal, distinctly pubescent at the base outside, very sparingly pubescent above or glabrous inside, lanceolate, about 7 cm. long, 10 to 12 mm. wide, slightly acuminate. Stamens indefinite, oblong, 1.5 mm. long, the connectives produced, rounded, truncate. Carpels many, oblong, densely appressed-pubescent, 1.3 mm. long, 1-ovulate; styles somewhat club-shaped, 2 mm. long, deciduous. Mature fruits subglobose or somewhat ellipsoid, about 2 to 2.5 cm. in diameter, densely ferruginous-pubescent as are the fruiting pedicels, the torus in fruit about 1 cm. in diameter.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1705* (type), *1412, 1320, Agama 1027,* October and November, 1920. In damp forests at low altitudes. A species apparently allied to *Polyalthia lateriflora* King, but at once distinguishable, among other characters, by its densely pubescent fruits.

Polyalthia dolichophylla Merr. in Philip. Journ. Sci. **14** (1919) 391.

British North Borneo, Labuk, Sekong, Sebuga, *Foxworthy 621, Villamil 264, Ramos 1573, 1639, 1642, 1717, 1739, 1740; Domingo 1110.* In damp forests along small streams at low altitudes. A fine series of specimens of this very characteristic species matching in all respects our series of specimens from Panay. The species was previously known only from Panay.

Polyalthia subcordata Blume Fl. Jav. Anon. (1828) 71, *t. 33, 36B;* Koord. & Valeton Bijdr. Boomsoort. Java **9** (1903) 292.

British North Borneo, Kalabakan, Tawao, Bibuga, and Batu Lima, *Wood 905, Villamil 246, Ramos 1198, 1632, 1661, 1878, 1928, 1930.* In damp forests along small streams at low altitudes. The fine series of specimens apparently represent the typical Javan form of the species, agreeing closely with Javan material and with the descriptions based on Javan material. I am inclined to believe that the Malay Peninsula form described and figured by King* as Blume's species is specifically distinct.

Polyalthia lateriflora (Blume) King in Journ. As Soc. Bengal **61**^{2} (1892) 58, Ann. Bot. Gard. Calcutta **4** (1893) 73, *t. 102.*

Guatteria lateriflora Blume Bijdr. (1825) 20, Fl. Jav. Ann. (1828) 100, *t. 50, 52 D.*

Sarawak, Samatang and Santubong, *Foxworthy 167, 449,* both in fruit, May and June, 1908. Malay Peninsula, Java.

Popowia Endlicher.

Popowia velutina King in Journ. As. Soc. Bengal **61**^{2} (1892) 94, Ann. Bot. Gard. Calcutta **4** (1893) 120, *t. 162B.*

British North Borneo, Sandakan, *Wood 850.* On forested slopes at low altitudes. Malay Peninsula (Perak).

Phaeanthus Hooker f. and Thomson.

Phaeanthus impressinervius sp. nov.

Arbor parva, ramulis floribusque dense ferrugineo- vel castaneo-pubescentibus, ramis glabris; foliis oblongo-oblanceolatis vel elliptico-oblanceolatis, 17-25 cm. longis, subcoriaceis, in siccitate atro-olivaceis, utrinque nitidis, glabris, vel subtus ad costam nervosque parce pubescentibus, apice acuminatis, basi acutis, nervis utrinque circiter 12, supra impressis, subtus valde perspicuis, arcuato-anastomosantibus; floribus circiter 2.3 cm. longis, extus dense ferrugino- vel castaneo-pubescentibus; sepalis petalisque exterioribus subaequalibus, ovato-lanceolatis, 1.5-2 mm. longis, acuminatis, petalis interioribus 10 mm. latis, acuminatis; capellis numerosis, 1-ovulatis, stigmate oblongo-obovoideo, dense ferrugineo-pubescente.

A small tree, the younger branchlets and flowers densely ferruginous- or castaneous-pubescent, the branches glabrous, brown, rugose. Leaves oblong-oblanceolate to elliptic-oblanceolate, 17 to 25 cm. long, 5.5 to 8 cm. wide, subcoriaceous, dark-olivaceous and shining on both surfaces when dry, the upper surface glabrous or, when young, sparingly pubescent along the midrib, the lower surface slightly pubescent along the midrib and lateral nerves, ultimately glabrous or nearly so, the apex acuminate, base acute; lateral nerves about 12 on each side of the midrib, impressed on the upper surface, very prominent on the lower surface, arched-anastomosing, the reticulations slender, lax; petioles somewhat pubescent, 8 to 10 mm. long. Flowers about 2.3 cm. long, externally very densely ferruginous- or castaneous-pubescent, blunt-acuminate; sepals and exterior petals subequal, ovate-lanceolate, 1.5 to 2 mm. long, acuminate, the interior petals broadly lanceolate, acuminate, up to 2.5 cm. long, 1 cm. wide, internally glabrous. Anthers many, oblong, slightly narrowed below, the connectives truncate. Carpels many, oblong, 1-ovulate, appressed-pubescent, 2 mm. long; stigmas oblong-obovate, densely ferruginous-pubescent, including the glabrous styleabout 1.2 mm. in length.

British North Borneo, Sibuga, near Sandakan, *Ramos 1792*, December, 1920. In damp forests along small streams at low altitudes. A species well characterized by its densely ferruginous- or castaneous-pubescent flowers and its subcoriaceous, very prominently nerved leaves, the midrib and nerves being conspicuously impressed on the upper surface.

Uvaria Linnaeus.

Uvaria micrantha (DC.) Hook. f. & Th. Fl. Ind. (1855) 103;
King in Ann. Bot. Gard. Calcutta (1893) 26, *t. 18.*
Guatteria micrantha DC. Mém. Anon. (1832) 42.

British North Borneo, Mempakat, near Kudat, *Agama 1081*, November 12, 1920, in thickets near the seashore. Burma to Indo-China, Malay Peninsula, Sumatra, Luzon, Mindoro, Panay, and Palawan.

Woodiella genus novum.

Sepala valvata, deorsum connata. Petala crassa, elongata, valvata, omnia usque ad 1 cm. connata, exteriora elliptica vel oblongo-elliptica, interiora, angustiora, oblanceolata. Stamina numerosa, oblonga, connectivo oblique truncato. Carpella numerosa, oblonga, 1-ovulata, stigmatibus compressis, orbicularibus, sessilibus, deciduis.—Arbor parva, inflorescentiis exceptis glabra; folia oblonga-elliptica vel oblongo-lanceolata, symmetrica, floribus mediocris, caulinis, fasciculatis, pedicellatis.

Woodiella sympetala sp. nov.

Arbor circiter 5 m. alta, inflorescentiis exceptis glabra, ramis teretibus, ramulis tenuibus; foliis oblongo-ellipticis vel oblongo-lanceolatis, chartaceis, 20-35 cm. longis, acuminatis, basi acutis vel rotundatis, nervis utrinque circiter 12, subtus perspicuis curvatis, obscure anatomosantibus; floribus fasciculatis, 3.5-4 cm. longis, leviter pubescentibus, petalis deorsum omnino connatis; fasciculis caulinis et in ramis vetustioribus, paucifloris.

A tree about 5 m. high, glabrous except the inflorescences, branches and branchlets terete, grayish, the ultimate branchlets about 1.5 mm. in diameter. Leaves oblong-elliptic to oblong-lanceolate, chartaceous, 20 to 35 cm. long, 6 to 13 cm. wide, rather pale when dry, shining, the apex rather conspicuously acuminate, base acute to rounded; lateral nerves about 12 on each side of the midrib, usually slightly impressed on the upper surface, very prominent on the lower surface, somewhat ascending, slightly curved, obscurely anastomosing, the primary reticulations slender, rather lax, subparallel; petioles 5 to 10 mm. long. Flowers fascicled on the branches below the leaves and on nodules on the trunk, yellowish-white, pedicelled, 3.5 to 4 cm. long, sparingly pubescent, their pedicels 2.5 to 3 cm. long, somewhat pubescent and with a small bracteole below the middle. Calyx about 1.5 cm. in diameter, somewhat pubescent, 3-lobed, the lobes broadly ovate, obtuse or acute, valvate, 8 to 9 mm. wide. Petals 6, valvate in two series, coriaceous, black when dry, wholly united for the lower 1 cm. the free portions of the outer ones oblong-elliptic to elliptic-obtuse, somewhat narrowed below, 3 cm. long, 12 mm. wide, the inner three narrowly oblanceolate, as long as the outer ones, but about one-half as wide, all thickly coriaceous, the tubular lower part of the corolla cylindric or slightly contracted at the throat, the lobes ascending or somewhat spreading. Stamens numerous, 3 mm. long, the connectives truncate, overlapping, only slightly produced. Carpels numerous, oblong, appressed-pubescent, 1.8 to 2 mm. long with 1 basal ovule; stigma orbicular, glabrous, compressed, sessile, about 0.8 mm. in diameter. Fruits oblong-ovoid, about 4 cm. long, dark-brown when dry, somewhat pubescent, subequally narrowed to the acute base and the obtuse apex, their pedicels pubescent, about 8 mm. long,the torus somewhat thickened, 1 cm. in diameter, ferruginous-pubescent; seed rather large (immature).

British North Borneo, Sibuga and Kalabakan, near Sandakan, *Ramos 1562* (type), *1808*, *Villamil 262*, September and November, 1916 and 1920. In damp forests, sometimes along small streams at low altitudes. This proposed new genus is dedicated to Mr. D. D. Wood, Conservator of Forests, British North Borneo. Through its petals being entirely united for the lower 1 cm. and otherwise strictly valvate, this proposed new genus approximates to *Papualthia*, a genus well represented in the Philippines and in New Guinea; it differs from *Papualthia* in its strictly 1-ovulate

carpels and in its symmetrical leaves. Its alliances otherwise are manifestly with *Polyalthia* § *Monoon*, from which it is at once distinguishable by its united petals. Like *Papualthia* it is probably a derivative of *Polyalthia*. Its flowers somewhat resemble those of *Enicosanthum*, but structurally are very different from those of that genus, and the proposed new genus is certainly not closely allied to *Enicosanthum*.

MYRISTICACEAE.

Knema Loureiro

Knema winkleri sp. nov.

Arbor, inflorescentiis exceptis glabra, ramulis ferrugineis, glaberrimis; foliis oblongis vel oblongo-ellipticis, coriaceis, 11-14 cm. longis, utrinque acutis, supra nitidis, olivaceis, subtus glaucis, nervis utrinque circiter 11, distinctis; floribus ♂ in alabastris depresso-globosis, subtriangularibusque, ferrugineo-pubescentibus, circiter 2.5 mm. diametro; pedicellis circiter 4 mm. longis; disco stamineo brevissime stipitato, glabro, triangulare 1.5 mm. diametro; antheris 6, in paribus ad angulos dispositis.

A tree entirely glabrous except the inflorescences. Branches dark-brown, terete, somewhat rugose, the bark fissured when dry, the very young branchlets ferruginous, shining, not at all pubescent. Leaves oblong to oblong-elliptic, coriaceous, 11 to 14 cm. long, 4.5 to 5.5 cm. wide, slightly subequally narrowed to the acute base and apex, the upper surface olivaceous, shining, the lower surface glaucous, the midrib and lateral nerves distinct on both surfaces, very prominent beneath, the nerves about 11 on each side of the midrib, the reticulations evident on both surfaces; petioles about 1.5 cm. long. Staminate flowers fascicled in the leaf axils and in the axils of fallen leaves, 5 to 10 in a fascicle, the pedicels minutely ferruginous-pubescent, about 4 mm. long, with a very small bracteole at the upper one-fourth, the buds minutely ferruginous-pubescent, depressed-globose, distinctly triangular, about 2.5 mm. in diameter; perianth-lobes coriaceous, orbicular-ovate, about 3 mm. long. Staminal disk subsessile, triangular, about 1.5 mm. in diameter, the anthers 6, in pairs, a pair at each angle of the disk.

Dutch Borneo, Hayoep, *Winkler 2390*, 1908. A remarkably distinct species. The specimens have been distributed as *Litsea* sp. It apparently is most closely allied to *Knema wrayi* Warb. of the Malay Peninsula, from which it is distinguished by its flowers, nerves, and especially by its distinctly triangular buds, strongly triangular staminal disk, and by its few anthers, these being 6 only and in pairs at the angles of the disk, the sides of the disk being naked and without anthers.

Knema oblongata sp. nov.

Arbor, ramulis dense ferrugineo-ciliato-tomentosis, ramis glabris; foliis oblongis, chartaceis vel subcoriaceis, 20-40 cm. longis, acuminatis, basi rotundatis, rariter subacutis, supra glabris, laevibus nitidis pallidis vel brunneis, subtus pallidioribus et leviter ciliato-pubescentibus, nervis utrinque circiter 33, supra leviter impressis, subtus valde perspicuis, reticulis subtus distinctis, supra subobsoletis; fructibus pedicellatis, ellipsoideis, 2.5-3 cm. longis, dense ferrugineo tomentosis, indumento plumoso, arillo apice tantum laciniato.

A tree about 8 m. high, the branchlets densely ferruginous-ciliate-tomentose, the branches glabrous or nearly so. Leaves oblong, chartaceous to subcoriaceous, 20 to 40 cm. long, 4 to 10 cm. wide, the apex distinctly acuminate, the base rounded, rarely subacute, the upper surface glabrous, smooth, shining, brownish or pale when dry, the lower surface paler, sometimes more or less glaucous, more or less ciliate-pubescent, the indumentum pale or ferruginous, rather dense along the midrib, scattered and more or less deciduous on the surface; lateral nerves about 23 on each side of the midrib, slightly impressed on the upper surface, very prominent on the lower surface, anastomosing, the reticulations rather close, distinct on the lower surface, but indistinct or often nearly obsolete on the upper surface; petioles rather stout, ferruginous-pubescent, 1 to 1.5 cm. long. Fruits axillary and in the axils of fallen leaves, ellipsoid, 2.5 to 3 cm. long, densely ferruginous-tomentose, the indumentum distinctly plumose. Aril lacerate only near the apex. Pedicels stout, ferruginous-pubescent, 8 to 10 mm. long.

British North Borneo, Batu Lima near Sandakan, *Ramos 1433, 1721, 1757, 1663* (type), October and November, 1920; *Agama 1003*, November, 1920. On forested slopes at low altitudes locally known as *dara-dara.* A species apparently most closely allied to *Knema laurina* Warb. from which it is distinguished by its more numerous nerves and by the reticulations being nearly obsolete on the upper surface. The leaves are also much larger than in Warburg's species, while the fruits are distinctly pedicelled.

Knema nitida sp. nov.

Arbor, inflorescentiis exceptis glabra, ramulis tenuibus, plerumque verruculosis; foliis chartaceis vel subcoriaceis, ellipticis vel oblongo-ellipticis, 18-30 cm. longis, apice rotundatis, obtusis vel obscure acuminatis, basi plerumque rotundatis, supra olivaceis, nitidis, subtus brunneis, nervis utrinque 14-20, subtus valde perspicuis, reticulis subparallelis, utrinque distinctis; floribus ♀ fasciculatis, pedicellatis, 7 ad 8 mm. longis, lobis ovatis vel oblong-ovatis, 4.5-5 mm. longis; ♂ 8-9 mm. diametro, lobis late ovatis, disco stamineo breviter stipitato, distincte triangulare, 2 mm. diametro, antheris 6; fructibus ellipsoideis, 3-4 cm. longis, minute ferrugineo-puberulis glabrescentibus, arillo apice tantum laciniato.

A tree about 8 m. high, glabrous except the inflorescences which are more or less ferruginous-pubescent. Branches brown, terete, somewhat wrinkled when dry, the bark slightly or not at all fissured, the ultimate branchlets about 2 mm. in diameter, usually slightly verruculose. Leaves chartaceous or subcoriaceous, elliptic to oblong-elliptic, 18 to 30 cm. long, 7 to 12 cm. wide, the apex rounded, obtuse or sometimes obscurely acuminate, the base usually rounded, the upper surface olivaceous, strongly shining, the lower surface brownish, sometimes slightly glaucous; lateral nerves 14 to 20 on each side of the midrib, very prominent on the lower surface, somewhat spreading, curved, obscurely anastomosing, the reticulations subparallel, distinct on both surfaces, petioles 2 to 3 cm. long. Pistillate flowers fascicled, axillary, their pedicels up to 10 mm. long; perianth 7 to 8 mm. long, the buds oblong, cylindric, the lobes ovate to oblong-ovate, rounded or subacute, glabrous, 4.5 to 5 mm. long, coriaceous, united below into a sparingly ferruginous-pubescent, 2 to 3 mm. long tube; ovary ovoid, pubescent, the style stout, glabrous, 1.5 mm. long. Staminate flowers 8 to 9 mm. in diameter, the lobes broadly ovate, concave, rounded or obtuse, glabrous or obscurely pubescent, the buds depressed-globose, the pedicels 5 to 6 mm. long, somewhat pubescent; staminal disk shortly stipitate, the disk distinctly triangular, about 2 mm. in diameter, the anthers 6, in pairs at the angles of the disk. Fruits ellipsoid, brown when dry, 3 to 4 cm. long, minutely ferruginous-pubescent or ultimately glabrous, their pedicels stout, 1 to 2 cm. long. Aril lacerate only at the apex.

British North Borneo, Batu Lima and Sebuga, near Sandakan, *Ramos 1278*, *1530* (type), *1664*, *1729*, *1902*, October, November, and December, 1920. Along small streams in damp forests at low altitudes. A species apparently most closely allied to *Knema korthalsii* Warb., but its ultimate branchlets entirely glabrous, the leaves relatively much wider and with fewer nerves, the reticulations distinct on both surfaces, the anthers 6 only and borne on the angles of the distinctly triangular staminal disk. It is one of the few known species with relatively large staminate flowers.

LAURACEAE.

Actinodaphne Nees.

Actinodaphne diversifolia sp. nov.

Arbor parva, ramis glabris, laevibus, ramulis dense ferrugineo-pubescentibus; foliis verticillatis, 10-30 cm. longis, utrinque subaequaliter angustatis, basi acutis vel cuneatis, apice tenuiter atro-brunneis, ferrugineo-villosis, nervis utrinque circiter 10, subtus valde perspicuis, reticulis primariis subparallelis, distinctis; umbellulis fasciculatis axillaribus extra-axillaribusque; bracteis orbiculari-ovatis, rotundatis, 2 mm. longis, deciduis, sessilibus vel subsessilibus, paucifloris; perianthii segmentis dense ferrugineo-pubescentibus, late ovatis; staminodeis 9, lanceolatis, membranaceis, filamentis brevibus, longissime ciliatis; sepalis accrescentibus in cupulo 4-5 mm. diametro, lobis subpersistentibus; fructibus ovoideis vel ellipsoideis.

A small tree, the branches glabrous or nearly so, smooth, the branchlets, inflorescences, and lower surface of the leaves conspicuously pubescent. Leaves verticillate, lanceolate to oblong-lanceolate, subcoriaceous, 10 to 30 cm. long, 3 to 7 cm. wide, subequally narrowed to the cuneate or acute base and to the rather slenderly and sharply acuminate apex, the upper surface smooth, grayish-green when dry, shining, the lower surface rather dark-brown and densely ferruginous-villous on the midrib and lateral nerves, the hairs on the reticulations more scattered; lateral nerves about 10 on each side of the midrib, curved-ascending, not very evident on the upper surface, very prominent on the lower surface, the primary reticulations subparallel, rather close, distinct; petioles 1 to 3.5 cm. long. Flowers fascicled at the nodes and also along the internodes of the ultimate branchlets, ferruginous-pubescent, the subtending bracts orbicular-ovate, rounded, more or less ciliate, about 2 mm. in diameter, deciduous. Staminate flowers several in each umbellule, the umbellules sessile or nearly so. Perianth segments densely appressed-pubescent, broadly ovate, 2 to 2.2 mm. long. Staminodes 9, membranaceous, lanceolate, glabrous, about 1 mm. long, their short filaments long-ciliate; glands conspicuous, ovoïd-reniform, 0.5 mm. long. Calyx-tube in fruit somewhat cup-shaped, 4 to 5 mm. in diameter, ferruginous-pubescent outside, villous inside, the perianth-lobes subpersistant, the pedicels stout, ferruginous-pubescent, 3 to 4 mm. long. Young fruits ovoid or ellipsoid, black when dry, wrinkled, about 8 mm. long.

British North Borneo, Sebuga, near Sandakan, *Ramos 1838*, December, 1920. In damp forests at low altitudes. A species perhaps as closely allied to *Actinodaphne ridleyi* Gamble as to any other species, but differing radically in its vegetative characters.

Litsea *Lamarck.*

Litsea cuprea sp. nov.

Arbor parva, ramis olivaceis, subglabris, laevibus, circiter 1 cm. diametro; foliis alternis lanceolatis, subcoriaceis, 35-40 cm. longis, utrinque subaequaliter angustatis, basi cuneatis, apice tenuiter acuminatis, supra glabris, griseo-olivaceis, nitidis, subtus densissime cupreo-pubescentibus, indumento nitido adpresso, nervis utrinque 15-18, adscendentibus, distinctis; umbellulis fasciculatis, axillaribus, subsessilibus; bracteis dense brunneo-pubescentibus, orbiculari-ovatis, 4-5 mm. diametro; perianthii segmentis elliptico-ovatis, obtusis, 3 mm. longis, staminibus fertilibus 9, filamentis 2 mm. longis, parce ciliatis, staminodeis in floribus ♀ linearibus vel lineari-spatulatis, 1-1.2 mm. longis.

A small tree, the branches brownish-olivaceous, about 1 cm. in diameter, smooth, glabrous or slightly pubescent. Leaves alternate, subcoriaceous, 35 to 40 cm. long, 8 to 10 cm. wide, subequally narrowed to the cuneate base and to the slenderly acuminate apex, the upper surface smooth, glabrous, grayish-olivaceous, the lower surface cupreous, densely pubescent with very short, appressed, somewhat shining hairs; lateral nerves 15 to 18 on each side of the midrib, curved-ascending at an angle of about 45°, distinct on the lower surface, obscure on the upper surface, the primary reticulations rather distinct beneath; petioles glabrous, 2 to 2.5 cm. long. Umbellules fascicled in the leaf axils, few in a fascicle, subsessile, the peduncles at most 2 mm. long, these and the involucral bracts densely brown-pubescent, the bracts 4, orbicular-ovate, 4 to 5 mm. in diameter. Flowers about 5 in each umbellule, their pedicels stout, 3 mm. long, densely pubescent. Perianth-segments of the staminate flowers elliptic-ovate, obtuse, somewhat pubescent, 3 mm. long. Fertile stamens 9, their filaments about 2 mm. long, sparingly ciliate; anthers all 4-celled, 1.2 to 1.5 mm. long. Pistillate flowers similar to the staminate ones, the staminodes linear to linear-spatulate, 1 to 1.2 mm. long, the glands conspicuous. Ovary glabrous, stigma very large.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1267*, October, 1920. In damp forests along small streams at low altitudes. A species strongly characterized by its elongated leaves which are grayish-olivaceous on the upper surface and densely cupreous-pubescent with short, appressed hairs on the lower surface. Its alliance appears to be with *Litsea firma* Hook. f. of the Malay Peninsula, Borneo, and Celebes, but it is radically different from that species in its vegetative characters.

Litsea caulocarpa sp. nov.

Arbor parva ramulis et subtus foliis plus minusve ferrugineo-pubescentibus, ramis teretibus, ramulis leviter angulatis; foliis alternis, oblongo-obovatis, subcoriaceis, 20-33 cm. longis, acutis vel obscure acuminatis, minute apiculatis, basi cuneatis, supra olivaceis vel viridi-olivaceis, glabris, nitidis, subtus brunneis, nervis utrinque circiter 30, perspicuis; umbellulis fasciculatis caulinis et in ramis vetustioribus; pedunculis circiter 15 cm. longis, dense pallide-pubescentibus; bracteis obovatis, 6 mm. longis, truncato-rotundatis, dense pubescentibus; perianthii segmentis 6, plerumque oblanceolatis, 4-5 mm. longis; staminibus fertilibus 12, filamentis tenuibus, parce ciliatis, 6-7 mm. longis; sepalis accrescentibus in cupulo, sublignoso, glabro, 1.5 cm. diametro, truncato, subsessili; fructibus ellipsoideis, 12 mm. longis.

A tree up to 7 m. high, the branchlets and the lower surface of the leaves more or less ferruginous-pubescent. Branches terete, brownish, somewhat wrinkled when dry, glabrous, the branchlets more or less angular, rather densely pubescent. Leaves alternate, oblong-obovate, firmly chartaceous or subcoriaceous, 20 to 33 cm.

long, 8 to 14 cm. wide, the apex acute or very obscurely acuminate, rather minutely apiculate, somewhat narrowed below to the cuneate base, the upper surface olivaceous or greenish-olivaceous, glabrous, smooth, shining, the nerves impressed, the lower surface usually brownish, pubescent with scattered, short, usually ferruginous hairs; lateral nerves about 20 on each side of the midrib, prominent on the lower surface, spreading-curved, obscurely anastomosing, the reticulations rather distinct; petioles pubescent, 1 to 3 cm. in length. Flowers fascicled on the larger branches and on the trunk, few to many umbellules in a fascicle, the individual peduncles up to 15 mm. long, densely pubescent, the involucral bracts obovate, 6 mm. long, truncate-rounded, densely pale-pubescent. Staminate flowers 6 in each umbellule, their pedicels 3 mm. long, densely pubescent. Perianth-segments 6, usually oblanceolate, 4 to 5 mm. long, somewhat pubescent. Fertile stamens 12, their filaments slender, 6 to 7 mm. long, somewhat ciliate; anthers about 1 mm. long. Glands conspicuous, dark-colored, oblong-obovoid, somewhat stipitate, about 1 mm. long. Fruits 2 or 3 in a fascicle, rarely solitary on the smaller branches, up to 20 in a fascicle on the trunk, the latter fascicles up to 7 cm. in diameter. Accrescent calyx cup-shaped, glabrous, about 1.5 cm. diameter, shallow, truncate, brown when dry, obscurely 6-sulcate or rounded-angular, subsessile or very shortly pedicelled, the fruits ellipsoid, more or less angular to sulcate when dry, rounded, about 12 mm. long.

British North Borneo, Sebuga and Labuk, *Ramos 1894* (type), *1591*, *Villamil 309*, November and December, 1920, and February, 1917. In damp level forests at low altitudes. A species probably as closely allied to *Litsea cauliflora* Stapf as any other described form, but differing in numerous details. It is well characterized by its fascicled, cauline inflorescences.

Litsea sandakanensis sp. nov.

Arbor parva ramulis et subtus foliis dense patuleque ferrugineo-pubescentibus; foliis oppositis, chartaceis, oblanceolatis vel oblongo-ellipticis, 22-34 cm. longis, utrinque subaequaliter angustatis, basi acutis, apice acutis vel acuminatis apiculatisque, supra viridi-olivaceis, nitidis, subtus ferrugineis, nervis utrinque 12-14, subtus cum reticulis valde perspicuis; fructibus subsessilibus, axilaribus, fasciculatis vel solitariis, globosis, glabris, 8-10 mm. diametro, sepalis accrescentibus in cupulo, truncato vel irregulariter 4-lobato subdisciformi, 5 mm. diametro.

A small tree, the branches, petioles and lower surface of the leaves densely and softly ferruginous-pubescent with spreading hairs. Leaves opposite, chartaceous, oblanceolate to oblong-elliptic, 22 to 34 cm. long, 6 to 10 cm. wide, subequally narrowed to the broadly acute base and to the acute or slightly acuminate and distinctly apiculate apex, the upper surface greenish-olivaceous, shining, glabrous except for the pubescent midrib, not foveolate, the lower surface ferruginous, softly pubescent; lateral nerves 12 to 14 on each side of the midrib, slightly impressed on the upper surface, very prominent on the lower surface, curved-ascending, strongly curved near the margin, scarcely anastomosing, the secondary nerves and reticulations lax, very prominent on the lower surface; petioles densely ferruginous or brown-pubescent, rather stout, 1 to 1.4 cm. long. Fruits axillary, subsessile, fascicled, or solitary, globose, glabrous, 8 to 10 mm. in diameter, dark-brown when dry, smooth, the accrescent calyx pubescent, truncate or irregularly 4-lobed, about 5 mm. in diameter, almost disk-like.

British North Borneo, near Sandakan, *Ramos 1507*, October, 1920. In forests at low altitudes. A species manifestly belonging in the group *Litsea sessiliflora* Hook. f., but the indumentum on the lower surface of the leaves much denser, the nerves only slightly impressed on the upper surface, and the reticulations not at all impressed and scarcely evident on the upper surface.

Litsea megalophylla sp. nov.

Arbor circiter 12 m. alta, ramis incrassatis, 1-2 cm. diametro, cicatricibus magnis instructis, rugosis, ramulis dense ferrugineo-pubescentibus; foliis coriaceis, obovatis vel oblongo-obovatis, 28-50 cm. longis, rotundatis, basi cuneatis, supra laevibus, pallide viridibus, nitidis, subtus brunneis, glabris, nervis utrinque circiter 25, cum reticulis valde perspicuis; infructescentiis racemosis, ex axillis defoliatis, 4-5 cm. longis, ferrugineo-pubescentibus; sepalis in cupulo valde accrescentibus paucis, sublignosis, rugosis, brunneis, glabris, cupulo 3 cm. longo, 2-2.5 cm. diametro, truncato, deorsum angustato crasse stipitato; fructibus ellipsoideis, leviter pubescentibus, 3.5 ad 4 cm. longis.

A tree up to 12 m. high, the branches glabrous, thickened, rugose, 1 to 2 cm. in diameter, brownish, the petiolar scars large and conspicuous, the ultimate branchlets 5 to 8 mm. in diameter, densely ferruginous-pubescent, more or less angular. Leaves coriaceous, obovate to oblong-obovate, 28 to 50 cm. long, 12 to 23 cm. wide, alternate, the apex broadly rounded, base cuneate, the upper surface smooth, pale-greenish when dry, the lower surface brown; lateral nerves about 25 on each side of the midrib, somewhat spreading, very prominent on the lower surface, curved-anastomosing close to the margin, the primary reticulations subparallel, very distinct; petioles stout, 2 to 3 cm. long, somewhat pubescent, ultimately glabrous. Fruits racemosely arranged on rather stout, ferruginous-pubescent rachises from the axils of fallen leaves or from the branches below the leaves, the rachises 4 to 5 cm. in length. Calyx accrescent, almost woody, cup-shaped, rugose, brown when dry, glabrous or nearly so, 2 to 2.5 cm. in diameter, 3 cm. in length, abruptly contracted into a stout pseudostalk 1 to 1.5 cm. in length. Fruits ellipsoid, brown when dry, sparingly pubescent, 3.5 to 4 cm. in length.

British North Borneo, Batu Lima, near Sandakan, *Wood 953* (type), *Ramos 1460,* October, 1920. In damp forests at low altitudes. A species strongly characterized by its unusually large, obovate to oblong-obovate, coriaceous, rounded, very prominently nerved and reticulate leaves; by its thickened branches; and by its racemose infructescences which are borne on the branches below the leaves. The accrescent calyces and fruits are unusually large. It probably belongs in the group with *Litsea megacarpa* Gamble, of the Malay Peninsula, but is radically different from that species.

Litsea ellipticibacca sp. nov.

Arbor parva, ramulis leviter brunneo-pubescentibus exceptis glabra, ramis teretibus, laevibus, ramulis 2 mm. diametro; foliis alternis, coriaceis, anguste oblongis, 15-20 cm. longis, utrinque subaequaliter angustatis, basi cuneatis, apice acutis, nervis utrinque 14-20, subtus cum reticulis subconfertis distinctis; fructibus axillaribus, fasciculatis, sepalis accrescentibus in cupulo, incrassato truncato circiter 12 mm. diametro, breviter pedicellato, fructibus ellipsoideis, apiculatis, circiter 1.5 cm. longis.

A small tree, the very young branchlets sparingly appressed brown-pubescent, otherwise glabrous (flowers unknown). Branches terete, smooth, dark-brown, the ultimate branchlets about 2 mm. in diameter. Leaves alternate, coriaceous, narrowly oblong, 15 to 20 cm. long, 3.5 to 5 cm. wide, subequally narrowed to the acute apex and to the cuneate base, the upper surface smooth, somewhat shining, brownish or olivaceous when dry, the lower surface paler; lateral nerves 14 to 20 on each side of the midrib, spreading, somewhat curved, distinct on the lower surface as are the rather close reticulations; petioles 1 to 1.8 cm. long, dark-brown or nearly black when dry. Fruits in axillary fascicles and in the axils of fallen leaves, usually about 3 in a fascicle, the accrescent calyces shallowly cup-shaped, thickened, brown, truncate, about 12 mm. in diameter, the pedicels stout, 3 to 4 mm. in length. Fruits ellipsoid or slightly narrowed upward, apiculate, dark-brown or olivaceous when dry, shining, rather coarsely reticulate-rugose, about 1.5 cm. long.

British North Borneo, Batu Lima near Sandakan, *Ramos 1397* (type), *1266*, October, 1920. In damp forests along small streams at low altitudes. This species manifestly belongs in the group with *Litsea singaporensis* Gamble and *L. perakensis* Gamble, from both of which it is distinguished by its ellipsoid, not globose, fruits.

Litsea grandis (Wall.) Hook. f. Fl. Brit. Ind. **5** (1886) 162; Gamble in Journ. As. Soc. Bengal **75**¹ (1912) 136.

Tetranthera grandis Wall. Cat. (1830) no. 2552, *nomen nudum;* Meissn. in DC. Prodr. **15**¹ (1864) 188.

Sarawak, Siol, *Native collector 2404 Bur. Sci.* February-June, 1914. Burma, Malay Peninsula, Java.

Litsea megacarpa Gamble in Kew Bull. (1910) 364, Journ. As. Soc. Bengal **75**¹ (1912) 175.

British North Borneo, Sebuga, *Ramos 1647*, November, 1920. In forests along small streams at low altitudes. Malay Peninsula.

Litsea bancana (Miq.) Boerl. Handl. Kenn. Fl. Nederl. Ind. **3** (1900) 143.

Tetranthera bancana Miq. Fl. Ind. Bat. **1**¹ (1858) 950.

Sarawak, Simatan and Santubong, *Foxworthy 126, 131, 425*, May and June, 1908. In forests at low altitudes. Banka, Java, Amboina.

Litsea odorifera Valeton in Ic. Bogor. **3** (1909) *t. 276.*

Sarawak, near Kuching, *Native collector 93, 720, 1896 Bur. Sci.* : British North Borneo, between Usukan and Khota Belud, *Mrs. Clemens 9765.* The specimens agree closely with Valeton's description and with material from specimens cultivated at Buitenzorg, Java. Sumatra, Palawan.

Dehaasia Blume.

Dehaasia triandra Merr. in Philip. Journ. Sci. **1** (1906) Suppl. 193.

British North Borneo, Batu Lima, near Sandakan, *Wood 956*, *Ramos 1634*, October and November, 1920. In forests at low altitudes. Philippines. The Bornean form has somewhat larger leaves than the common Philippine one, but the fertile stamens are 3 only, and there appears to be no essential differences.

Lindera Thunberg.

Lindera malaccensis Hook. f. Fl. Brit. Ind. **5** (1886) 183; Gamble in Journ. As. Soc. Bengal **75**¹ (1912) 194.

British North Borneo, Sandakan, *Wood 965, Ramos 1538*, October, 1920. In forests at low altitudes. Malay Peninsula.

HERNANDIACEAE.

Illigera Blume.

Illigera celebica Miq. Ann. Mus. Bot. Lugd. Bat. **2** (1865-66) 215.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1325.* In thickets at low altitudes. The genus is new to Borneo, the species being previously known only from Celebes. The Bornean specimens agree very closely with Miquel's description except that the filaments are puberulent rather than pilose.

SAXIFRAGACEAE.

Polyosma Blume.

Polyosma integrifolia Blume Bidjr. (1825) 659.

British North Borneo, Sibuguey, near Sandakan, *Ramos 1643*. In forests along streams at low altitudes. Malay Peninsula, Sumatra, Java.

CONNARACEAE.

Agelaea Solander.

Agelaea agamae sp. nov.

Frutex scandens, inflorescentiis exceptis glaber; foliis 3-foliolatis, foliolis chartaceis vel subcoriaceis, oblongo-ellipticis, 9-15 cm. longis, perspicue obtuseque acuminatis, basi rotundatis vel subacutis, 3-nerviis, nervis adscendentibus, utrinque plerumque 3, perspicuis; paniculis e ramis defoliatis, leviter pubescentibus, 5 cm. longis, folliculis oblongo-obovoideis, 1-1.4 cm. longis, obtusis, haud rostratis, leviter rugosis sed haud tuberculatis, dense minuteque puberulis; seminibus haud arillatis.

A scandent, glabrous vine or the inflorescences slightly pubescent. Branches terete, grayish-brown. Leaves 3-foliolate, their petioles 6 to 12 cm. long; leaflets chartaceous or subcoriaceous, oblong-elliptic, entire, 9 to 15 cm. long, 4 to 6.5 cm. wide, the apex rather conspicuously acuminate, the acumen blunt, the base rounded to subacute, 3-nerved, the lateral leaflets somewhat inequilateral, the upper surface grayish, the lower surface somewhat brownish when dry; lateral nerves above the basal pair usually 3 on each side of the midrib, ascending at an angle of about 45°, somewhat curved, anastomosing, the primary reticulations lax, distinct; petiolules black when dry, about 5 mm. long. Inflorescences from the branches below the leaves, about 5 cm. long, slightly pubescent when young. Sepals elliptic-ovate, obtuse, 1.5 mm. long, more or less pubescent. Petals glabrous. Follicles somewhat inequilateral, oblong-obovoid, 1 to 1.4 cm. long, obtuse, not at all beaked, slightly rugose when dry, densely and minutely puberulent, the indumentum brown. Seeds narrowly oblong, up to 9 mm. long, the aril entirely wanting.

British North Borneo, Bulu River Valley, near Sandakan, *Agama 736*, September, 1919. In forests at low altitudes. A species belonging in the group with *Agelaea wallichii* Hook. f. of the Malay Peninsula and Sumatra, from which it differs radically in its follicles not being at all beaked and not at all tuberculate, and in the entire absence of the aril. From the Philippine *Agelaea trinervis* (Llanos) Merr., which it resembles even more closely than it does *A. wallichii*, it differs in its non-tuberculate follicles which are not at all beaked, shorter inflorescences, and non-arillate seeds.

Agelaea sarawakensis sp. nov.

Frutex scandens, inflorescentiis exceptis glaber; foliis 3-foliolatis, foliolis oblongis, coriaceis, 20-30 cm. longis, 6 ad 9 cm. latis, apice obscure obtuseque acuminatis, basi plerumque rotundatis, supra puncticulatis, nervis utrinque 8-10, patulis, perspicuis, anastomosantibus, reticulis perspicuis, densis; cymis axillaribus, fasciculatis, sub fructu 2 cm. longis; folliculis inaequilateralibus, 12-14 mm. longis, rugosis sed haud tuberculatis, brevissime rostratis, dense brunneo-pubescentibus; seminibus oblongo-ellipsoideis, 12 mm. longis, in inferiore parte quarta arillatis.

A woody vine, glabrous except the inflorescences, the branches reddish-brown, terete. Leaves 3-foliolate, their petioles stout, 8 to 11 cm. long; leaflets coriaceous, oblong, 20 to 30 cm. wide, obscurely blunt-acuminate, the base usually rounded, that of the lateral ones slightly asymmetric, the upper surface minutely pitted; lateral nerves 8 to 10 on each side of the midrib, spreading at nearly right angles, curved, strongly anastomosing, prominent on the lower surface, the reticulations rather close, prominent; petiolules 5 to 7 mm. long. Panicles cymose, fasciculed in the upper axils, in fruit 2 cm. long or less, somewhat pubescent. Follicles somewhat rugose, inequilateral, 12 to 14 mm. long, very shortly beaked, not tuberculate, densely pubescent with short brown hairs, when mature strongly recurved. Seeds oblong-ellipsoid, about 12 mm. long, arillate in the lower one-fourth.

Sarawak, near Kuching, *Native Collector 1101*, *Bur. Sci.*, received in November, 1912. A species apparently most closely allied to *Agelaea hullettii* King of the Malay Peninsula, but the leaflets are larger, obscurely and obtusely acuminate, not acute, their bases rounded, not cuneate.

Agelaea woodii sp. nov.

Frutex scandens, ramulis et inflorescentiis et foliis utrinque ad costam nervosque ferrugineo-pubescentibus; foliis 3-foliolatis, foliolis oblongo-ellipticis vel elliptico-ovatis, 10-15 cm. longis, basi rotundatis, apice perspicue obtuseque acuminatis, nervis utrinque 4 vel 5, perspicuis; paniculis axilaribus terminalibusque, angustis, 5-10 cm. longis; floribus 4- et 5-meris; sepalis dense pubescentibus, 1.8 mm. longis; staminibus 8 vel 10, filamentis glabris; carpellis 4 vel 5, dense hirsutis, anguste oblongis.

A scandent vine, the larger branches glabrous, purplish-black when dry, the branchlets, inflorescences and petioles rather densely ferruginous-pubescent. Leaves 3-foliolate, their petioles 4 to 5 cm. long; leaflets chartaceous or subcoriaceous, entire, oblong-elliptic to elliptic-ovate, 10 to 15 cm. long, 5 to 8 cm. wide, the base rounded, somewhat 3-nerved, the apex conspicuously acuminate, the acumen stout, about 1 cm. long, blunt, the upper surface brownish-olivaceous, glabrous except for the ferruginous-pubescent midrib and nerves, the lower surface pale-brownish, somewhat pubescent along the midrib and nerves; lateral nerves above the basal pair 4 or 5 on each side of the midrib, prominent, curved, ascending, the primary reticulations also prominent; petiolules ferruginous-pubescent, about 4 mm. long. Panicles narrow, terminal and in the axils of the uppermost leaves, 5 to 10 cm. long, densely pubescent. Flowers 4- and 5-merous, white. Sepals oblong, obtuse, pubescent, 1.8 mm. long. Petals narrowly oblong-obovate, glabrous, 3.5 mm. long, 1 to 1.2 mm. wide, obtuse. Stamens 8 or 10, their filaments glabrous, 2 to 4 mm. long. Carpels 4 or 5, narrowly oblong, 1 mm. long, densely hirsute.

British North Borneo, Suan Lamba River near Sandakan, *Agama 573*, August, 1918. In level forests at low altitudes. The specimens were originally identified as *Agelaea borneensis* Merr. from which the species is radically distinguished by its slightly pubescent leaflets and by its floral characters. On account of the number of the stamens its alliance seems to be with *Agelaea wallichii* Hook. f. rather than *A. borneensis*. From *A. agamae* it is distinguished by its indumentum and by its inflorescences being terminal and axillary, not cauline.

Connarus Linnaeus.

Connarus euphlebius sp. nov.

Frutex scandens, perspicue ferrugineo-pubescent; foliis usque ad 40 cm. longis, foliolis plerumque 7, oblongo-ellipticis, chartaceis vel subcoriaceis, 10-16 cm. longis, supra glabris, nitidis, subtus ad costam nervosque ferrugineo-pubescentibus, acuminatis, basi rotundatis vel acutis, minute peltatis, nervis utrinque 10-12, supra impressis, subtus valde perspicuis; folliculis inaequilateraliter obovoideis, 4.5-5 cm. longis, 3 cm. latis, extus dense rufo-brunneo-pubescentibus, intus simpliciter pubescentibus, apice late rotundatis, inflatis, 2 cm. crassis, deorsum angustatis.

A woody vine, the branchlets, petioles, inflorescences, fruits, and the lower surface of the leaflets on the midrib and lateral nerves densely ferruginous-pubescent, the branches up to 1 cm. in diameter also with similar indumentum. Leaves up to 40 cm. long, rather long-petioled; leaflets usually 7, oblong to oblong-elliptic, chartaceous or subcoriaceous, 10 to 16 cm. long, to 6 cm. wide, the upper surface olivaceous, shining, the lower surface paler, apex shortly and obtusely acuminate, base rounded to obtuse and usually minutely peltate; lateral nerves 10 to 12 on each side of the midrib, impressed on the upper surface, very prominent on the lower surface, somewhat curved and ascending at an angle of about 45°, the primary reticulations subparallel, distinct. Panicles in fruit about as long as the leaves, the folicles obovoid, inflated, 4.5 to 5 cm. long, about 3 cm.

wide, the apex broadly rounded, the stigmatic portion broadly acute and laterally situated at about the upper two-thirds, gradually narrowed to the acute or somewhat obtuse base, inflated, about 2 cm. thick, outside very densely pubescent with dark reddish-brown hairs, inside simply pubescent with pale-brownish hairs. Seeds oblong, shining, the aril fleshy, yellowish-brown when dry, about 7 mm. long.

British North Borneo, Batu Lima near Sandakan, *Ramos 1181*, October, 1920. In damp forests and in clearings at low altitudes. A species well characterized by its very prominently nerved leaflets, the nerves being impressed on the upper surface and very prominent on the lower surface. The dark-brown indumentum of the branches, inflorescences, fruits, petioles and on the midrib and nerves on the lower surface of the leaflets, composed of short simple hairs, is characeristic. It apparently belongs in the group with *Connarus ferrugineus* Jack.

Cnestis Jussieu.

Cnestis palala (Lour.) comb. nov.

Thysanus palala Lour. Fl. Cochinch. (1790) 284, excl. syn. Rumph.

Thysanus cochinchinensis DC. Prodr. **2** (1825) 91.

Cnestis diffusa Blanco Fl. Filip. (1837) 386.

Cnestis ramiflora Griff. Not. **4** (1854) 432.

British North Borneo, Kudat, *Castro 989*, November, 1920, on slopes at low altitudes. Burma, Siam, Indo-China, Malay Peninsula, Sumatra, and the Philippines. The genus is new to Borneo. Loureiro's description clearly applies to this species and his specific name should be adopted.

The Bearded Pig (*Sus barbatus*) in the Malay Peninsula.

By H. C. Robinson and J. C. Moulton.

We owe the remarkable discovery of the Bearded Pig in the Malay Peninsula to Dr. W. S. Leicester an enthusiastic sportsman who obtained a single female specimen some years ago in the vicinity of Pekan, Pahang. The occurrence, however, was so remarkable and so at variance with preconceived ideas of geographical distribution that pending further evidence it was not considered advisable to place the occurrence on formal record. Now however that a further specimen has been obtained from the same locality there is no doubt whatever that the species must be regarded as a member of the peninsula fauna, though as noted below we think it not improbable that its presence is really due to some extraordinary change resulting in the landing of a herd from Borneo, the home of the true *Sus barbatus*, or from the Rhio Archipelago where the rather dubious race *S. barbatus oi* is found.

In answer to queries Dr. W. S. Leicester wrote under date March 19th. 1918, in reference to the original specimen—a fully adult female: " Yes I am quite certain she was shot in the neighbourhood of Pekan. I remember a herd of this breed appeared in the neighbourhood and I shot this large sow and several half grown ones from time to time but could not get at the big boar which was very cunning and got away every time. They were some time about Pekan but eventually disappeared and I have not come across any since."

Dr. Leicester very kindly presented this specimen to the F. M. S. Museums.

Mr. J. E. Kempe, District Officer, Pekan, has now obtained the skull of a boar, which he has generously presented to the Raffles Museum, Singapore; he writes under date December 6th. 1921: "It was shot by Towkay Lee Cheow,—an old Pekan character who has hunted and kept a pack these thirty years—about six weeks ago at a place called Sungei Genek, some two miles up river from Pekan town. He gave me the skull and the description and told me that in all his experience extending over thirty-three years, and including the slaughter of thousands of pigs he had never seen such an animal............... He told me that the remarkable things about it were its great length and *height,* but what impressed him most was the fact that it had a thick tuft of hair under each eye about two inches long and a good sized beard.

" It weighed 180 katis (240 pounds) and was very emaciated. He said he thought, if in condition, it would have scaled 230 katis or more. It was a solitary boar."

The above statement supports the suggestion that this animal was the last survivor of some herd that had gained access to the Malay Peninsula and which had not been able to maintain itself under exotic conditions. Possibly even, it was the actual boar to which Dr. Leicester refers.

The description together with an excellent sketch with measurements, at once suggested the interesting possibility of this pig being *Sus barbatus* which was originally described from Borneo and later discovered in Sumatra and the Rhio Archipelago, and described by Miller under the name *Sus oi.* [1]

A comparison of the skulls with a topo-type of *Sus oi* from the Indragiri River, S. E. Sumatra, and with specimens from Tanjong Batu, Great Durian Island and Bintang Island, Rhio Archipelago, shows that they cannot be separated with certainty from this form, nor on the other hand can they be distinguished from a considerable series of the true *Sus barbatus* from various parts of Sarawak, Borneo.

The question then arises, is this pig indigenous in the Malay Peninsula, or is this particular record the result of some fortuitous visit by an adventurous pair—perhaps from Pulo Batam, 10 miles south of the southern extremity of Johore—who established themselves for a brief period in Pahang? Native stories of a giant white pig in Johore undoubtedly refer to this species. On the whole we are inclined to think that it is not indigenous in the Malay Peninsula. Its rarity here—we know of no other examples having beeen killed or seen authentically—seems to point to the fact of it being only an occasional visitor. If it were a Peninsula species in the strict sense, the geographical distribution would be difficult to explain. On the other hand one should not lose sight of the fact that under favourable circumstances sufficient individuals might reasonably come in from the Malayan Islands near the mainland and establish themselves for a noticeable period.

Mr. Boden Kloss [2] has recently dealt with the Malaysian Bearded Pig. He points out the difficulty of distinguishing *Sus barbatus* of Borneo and *Sus oi* of Sumatra and Rhio on the dental characters given by Miller. [3] We agree that they are too variable to be of any use. Kloss however would separate *Sus oi* on the longer muzzle ("and perhaps a little broader"); the longer mandibular symphysis; the deeper mandible and the slightly more concave profile of the face. These statements broadly speaking agree with certain notes made by one of us in the early part of 1918 but hitherto unpublished on the topo-type of *Sus oi* in the Raffles Museum, which were as follows:—

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1. Miller, Proc. Biol. Soc. Washington, xii, p. 51 (1902).
2. Kloss, Journn. Straits Branch, Roy. Asiat. Soc. No. 83, pp. 147, 150, (1921).
3. Miller, Proc. U. S. Nat. Mus. pp. 737-758 pls. XXXIX-LXIII (1906).

"The specimen is an absolute topo-type of *Sus oi* and in view of certain differences between it and the description and measurements of the type merits more detailed description. The animal is very fully adult but not aged. The naso-frontal suture is still visible but the basi-occipital is completely ossified. The teeth including the posterior molars in both jaws are somewhat worn but not so that the details of the enamel spaces cannot be recognized.

"Viewed in the basal aspect, the rostrum, anterior to the canines is broader than in similarly aged specimens of *S. barbatus.* The zygomata are more heavily built and more divergent and the tusk sheaths more recurved than in the Bornean animal while the cranial region is more sharply bent upwards from the level of the orbits. The mandibular symphysis is longer and this region of the jaw heavier than in *Sus barbatus* of equal size. Mr. Miller states that out of the specimens examined by him only two, the type and a specimen from Palembang, had the posterior molars in a condition fit for examination. The diagnosis of the race, however, depends on the fact that in *Sus oi* the upper posterior molar has 'its posterior portion much narrowed* the lower tooth lacking the terminal heel but with the third transverse ridge reduced to a terete heel-like remnant.'"

Further examination of larger series from Borneo and elsewhere now convinces us that real differences between the Bornean animal and others from Rhio and Sumatra have not yet been demonstrated and that all the alleged characters of skulls from the latter localities can be explained by the varying age and innate variability of the specimens examined.

We are therefore of the opinion that there is no justification for regarding *Sus oi* as distinct, even subspecifically, from *Sus barbatus* and we therefore retain this last name to cover the Bearded Pig of Borneo, Sumatra, the Rhio Archipelago and Pahang.

The Giant Pig of South East Borneo and that from portions of Eastern Sumatra may possibly be a distinct race or even species as suggested by Kloss but we have no material on which to base an opinion. The former has been named *Sus gargantua,* Miller, and is based on a single not very old skull in the collection of the Agricultural High School, Berlin, from an unspecified locality in South East Borneo, which is the largest known skull of the genus *Sus* in any collection. The Sumatran form, as yet known from native accounts only, has been inadvertently named *Sus branti* by Kloss (*antea*) though as the name is accompanied by a description it will, by the laws of nomenclature, stand.

A table of measurements of the Peninsular, Bornean, Sumatran and Rhio Archipelago specimens of *Sus barbatus* is

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* "This is visible in one young adult male (3rd upper molar fully erupted but hardly worn) from Sarawak."

	Sarawak, adult male. H. C. R./377.	Sarawak, aged male. H. C. R./368.	Nr. Ipoh, Perak, male. Selangor Museum.	Rawang, Selangor, male. Selangor Museum.	Kuala Lumpur, Selangor, male. Selangor Museum.	Lanet, Perak, male. Selangor Museum.
	mm.	mm.	mm.	mm.	mm.	mm.
Upper length		422	361	352	336	354
Basal length		375	323	. .	297	309
Basilar length		365	301	. .	276	291
Palatal length		287	225	219	207	219
Width of palate at p.m¹		49	42	40	40	38
Width of palate includin		70	73	74	71	68
Zygomatic breadth		151	155	154	145	141
Least width of palate at fro		29	25	25	25	20
Least interorbital breadth		68	74	78	71	73
Parietal constriction		21	31	45	27	23
Nasal breadth at posteri tremity of premaxilla		35	30	39	30	31
Length of nasals		196	186	175	168	171
Occipital depth to basion		123	119	. .	119	109
Mandible	370	331	283	277	268	279
Maxillary tooth row (alve		124	117	115	118	12
Second upper molar		23×21	20×20	20×21	21×20	21×20
Third upper molar		35×22	35×22	36×24	32×22	37×22
Mandibular tooth row (al	131	121	111	110	113	110
Second lower molar	24×18	23×17	20×17	20×18	21×18	21×16
Third lower molar	44×19	41×20	39×20	39×21	37×20	38×18
			Malay Peninsula			
			Sus barbatus			

Cranial Measurements of Malaysian Pigs.

Sus barbatus *Muller* & **Sus jubatus** *Miller.*

	Pekan, Pahang, female. Dr. Leicester (c) Selangor Museum.	Pekan, Pahang, male. J. E. Kempe (c) Raffles Museum, Singapore.	Indragiri River, S. E. Sumatra, male U. S. Nat. Mus. *Type.*	Indragiri River, S. E. Sumatra, male. Raffles Museum, Singapore.	Bintang Id. Rhio. Archipelago male. B. M. 9.4.1.507.	Sarawak, male. B. M. 97.6. 25.1.	Sarawak, male. B. M. O. 3.30. 10.	Baram, Sarawak, male. B. M. 90.6 25.10.	Sarawak, aged male. H. C. R./367.	Sarawak, adult male. H. C R./369.	Sarawak, adult male. H. C. K./374	Sarawak, adult made. H. C. K./375.	Sarawak, adult male. H. C. R./378.	Sarawak, adult male. H. C. K./377.	Sarawak, aged male. H. C. R./368.	Nr. Ipoh, Perak, male. Selangor Museum.	Rawang, Selangor, male. Selangor Museum.	Kuala Lumpur, Selangor, male. Selangor Museum.	Lanet, Perak, male. Selangor Museum.
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Upper length	436	447	465	480	433	486	500	483	468	441	433	443	486		422	361	352	336	354
Basal length	381	428	417	415					402	382	402	393	415		375	323	..	297	309
Basilar length	374	427	393	390	362	413	418	400	393	373	393	384	405		365	301	..	276	291
Palatal length	302	344	331	330					328	308	313	310	332		287	225	219	207	219
Width of palate at p.m^1	51·5	57	52	50					61	58	57	53	59		49	42	40	40	38
Width of palate including m^3	69	73	72·2	72·6					79	74	72	68	72		70	73	74	71	68
Zygomatic breadth	160	182	177	162					180	176	176	168	181		151	155	154	145	141
Least width of palate at front of m^3	30·0	28	30·2	28·4					33	30	28	27	28		29	25	25	25	20
Least interorbital breadth	64	75	83	80	71	68	76	77	80	73	81	76	75		68	74	78	71	73
Parietal constriction	19	19·5	5	11					19	18	11	14	17		21	31	45	27	23
Nasal breadth at posterior extremity of premaxillaries	36	37	40·9	38·0					41·5	37	33	38	40		35	30	39	30	31
Length of nasals	232	260	245	240	216	252	253	239	237	218	220	220	238		196	186	175	168	171
Occipital depth to basion	118	153	152	140					147	142	137	140	144		123	119	..	119	109
Mandible	331	378	373	360					360	343	355	348	369	370	331	283	277	268	279
Maxillary tooth row (alveoli)	133	141	142	129·4	125	135	134	134	128	129	134	140	138		124	117	115	118	12
Second upper molar	23×18	21×19	22×18	23×19·4					20×19	22×20	24×21	24×21	24×21		23×21	20×20	20×21	21×20	21×20
Third upper molar	33×20	25×23	34·2×21·8	31·0×21·0	37×23	39×21	39×21	39×23	39×23	37×22	36×22	37×22	39×22		35×22	35×22	36×24	32×22	37×22
Mandibular tooth row (alveoli)	128	134	134	122	120	126	129	137	124	124	132	128	128	131	121	111	110	113	110
Second lower molar	215×16	24×17	22·7×15·8	22·0×16·0					21×17	22×15	23×18	24×18	24×17	24×18	23×17	20×17	20×18	21×18	21×16
Third lower molar	46×17	14×19	38·9×17·7	33·8×18·4	41×18	38×19	38×20	47×17	46×19	37×18	44×20	48×18	42×19	44×19	11×20	39×20	39×21	37×20	38×18
	Malay Peninsula		Sumatra		Rhio Archip.	Borneo										Malay Peninsula			
	Sus barbatus															Sus barbatus			

appended in which is included for comparison measurements of normal specimens of the ordinary central Malayan form, *Sus jubatus,* Miller, from which it will at once be seen how greatly *Sus barbatus* differs in size.

For the benefit of the non-technical sportsman, who may meet the Bearded Pig in the field, we may state that it may at once be recognized:—

(1) By its large size, elongated and narrow head and by the great height at the shoulder and narrow dorsal ridge,

(2) By its pale colour compared to the ordinary local form,

(3) By its *beard* and by the possession between the eye and the nostril on each side of the muzzle of a large warty outgrowth covered with bristles, which is large and conspicuous in males, smaller in females, but always visible even in young animals.

From the accounts available it would appear that Sumatran, Rhio Archipelago and Malayan animals are more scantily haired than those from Borneo. This was certainly the case with the Bintang specimen recorded in the table when seen in the flesh.

The reported occurrence of Russell's Viper in Sumatra & the Malay Peninsula.

By J. C. Moulton.

Some 50 years ago Dr. J. Fayrer compiled statistics to show that the death-rate in India from snake-bite amounted to about 20,000 persons per annum. The snakes responsible for this enormous mortality are the Cobra (*Naia naja = tripudians*), the Krait (*Bungarus candidus*), the Hamadryad (*Naia bungarus*) and Russell's Viper (*Vipera russelli*), in that order of importance.

In Malaysia three species of Krait are known: the Banded Krait (*Bungarus fasciatus*), the Krait (*B. candidus*), and the Yellow-headed Krait (*B. flaviceps*). All are rare in Malaysia. The Cobra and Hamadryad however are by no means rare in the Malay Peninsula and adjoining Islands. Although records of death from snake-bite in these Malay countries are extremely rare it is generally known that these two snakes are the most dangerous and the most to be feared. Other snakes such as the Coral Snakes and Pit-Vipers in Malaysia are poisonous, although an injection of their poison is not necessarily always fatal.

Russell's Viper, or the Daboia, or Tic Polonga, as it is variously called in India, is particularly deadly, and unfortunately common in many parts of India. Fayrer states that 471 snakes were brought in for record in one day at Amritsar in 1866. Of these over 300 belonged to this one deadly species. E. G. Boulenger states that it is "even more venomous than the majority of Cobras, its bite killing fowls in from thirty seconds to a few minutes, dogs in from ten minutes to four or five hours, and man in under twenty-four hours."

Three recognized authorities in herpetology, Drs. G. A. Boulenger, T. Barbour and Nelly de Rouij have excluded Russell's Viper from the Malay Peninsula or Archipelago. And such I think is the generally accepted opinion. It is therefore somewhat alarming to find the following passage in a book entitled "Reptiles of the World" by Raymond L. Ditmars, Curator of Reptiles and Assistant Curator of Mammals in the New York Zoological Park, published in London 1910:—

> "One of the commonest and most deadly snakes of India is a species of *Vipera*. This is *Tic Polonga,* the *Daboia,* or *Russell's Viper, V. russellii,* a beautifully-coloured reptile reaching a length of five feet.

"The range of this snake, the largest of the Asiatic vipers, embraces India, Ceylon, Burma, Siam *and the Malay Peninsula. My friend, Mr. Rudolf Weber, brought several small specimens of typical coloration from Sumatra, showing the species to occur on at least one of the larger islands.*"*

E. G. Boulenger (1914) states that:—

"*Russell's viper, V. russelli,* or Tic-polonga, as this large and justly dreaded snake is known in Ceylon, is found in hills, as well as in the plains of India, Ceylon, Burma, Siam, *and Sumatra.*"

He based his record as regards Sumatra on the British Museum Catalogue, but in a letter to me dated 20th June, 1921, Mr. Boulenger agrees now that this may be regarded as a mistake.

In spite of this very definite assertion by Ditmars I felt that the discovery of Russell's Viper in Sumatra was so remarkable that it was worth while making some inquiries in order to obtain confirmation of this interesting record.

My friend Dr. T. Barbour of the Museum of Comparative Zoology, Cambridge, Mass., at my request interested himself in the matter and ascertained from Mr. Ditmars himself the following particulars about Mr. Weber and his Sumatran collections. Dr. Barbour writes:—

"It seems that between 1892 to 1898 he (Mr. Rudolf Weber) was employed as an artist to illustrate publications of the Museum of Natural History in New York. During the latter part of this period he went on a scientific mission to Sumatra, but Ditmars informs me that now he thinks of it, that all of Weber's reptiles were dumped into large jars and remained lying about the Museum uncared for many years." Dr. Barbour concludes that "there is absolutely no reason whatever to suppose that Weber did not collect these creatures *in India* while he was passing through en route to Sumatra."

The specimens are not to be found in the New York Museum now.

In the British Museum Catalogue of Snakes, the locality for one specimen in that Museum is "? Sumatra." In the British Museum Hand-list of Snakes the distribution is given as "India, Burma and Siam; Java and Sumatra ?"

In the light of the above I think one must look with considerable suspicion on the definite assertions by Ditmars and E. G. Boulenger as to its positive occurrence in Sumatra. Dr. Malcolm Smith gives Bangkok as the southernmost locality for it in Siam, and that I think must be regarded, at present, as the nearest point to the Malaysian sub-region, this deadly snake has yet reached.

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* The italics are mine. J. C. M.

A New Method of Writing Trinomials.

By J. C. MOULTON.

In my "Hand-List of the Birds of Borneo" published in this Society's Journal No. 67, 1914 (pp. 125-191) I introduced a slight innovation in the method of writing trinomials.

A trinomial is usually written thus:—

Chloropsis viridis viriditectus Hartert.

I criticized this method on two grounds:—

(i) that the relatively greater importance of the *specific* name is not emphasised, or, to put it another way, that the *sub-specific* name is given undue prominence equal to, if not greater than, the *specific* name.

(ii) that the name of the author of the *species* is omitted, while that of the author of the less important *subspecies* is retained.

As an improvement I therefore wrote:—

CHLOROPSIS VIRIDIS Horsfield *viriditectus* Hartert

shortened to:—

CHLOROPSIS VIRIDIS Horsf. *viriditectus* Hart.

In this way due prominence is given to the specific entity, while the fact that the species is divisible into geographical races of relatively less importance is shewn by placing the subspecific name in less prominent type. The insertion of the auther's name after the species obviates ambiguity, and is only a reasonable recognition of that author's work. At the same time it serves to mark off the subspecific name as a form apart.

It might be argued of course with justice that the name of the author of the *genus* should also be inserted. But the long-established custom of running generic and specific names together is sufficiently important to over-ride any such further innovation.

I referred the point to the British Association Committee on Zoological Bibliography and Publication, whose opinion thereon was published in the Committee's Report to the Association (Section D) at the Edinburgh meeting in 1921 as follows:—

> "The Committee agrees that the alterations introduced by Mr. Moulton tend to increased clearness. If it be ever necessary to give the name of the author of the species, it is no less necessary when the form referred to is one of the subspecies into which the species has been divided, and Mr. Moulton's method of introducing it seems unexceptionable.

> "The Committee does not wish by this expression of opinion to encourage the insertion of authors' names in general writing, except when they are needed to avoid ambiguity. Mr. Moulton's devices are best suited for such systematic lists as those in which he has employed them."

The type to be used is of some importance. In criticism of my method it has been suggested that capitals and small capitals would be better than small capitals and italics, because italics are so generally used to denote a synonym. The disadvantage of this is that capitals are so often required in systematic lists for subfamily names that it is desirable to reserve a less prominent type for the genus and species when written together in this way. Small capitals or clarendon would appear the most suitable for the genus and species with italics for the subspecies.

The inclusion of authors' names undoubtedly has a cumbersome effect and should only be employed in systematic lists or detailed monographs. In other works it is reasonable to omit them altogether; in fact for general purposes it should often suffice to give only the specific name and omit the subspecific name, unless there is any point in drawing attention to the subspecific distinction of the particular form under discussion.

The usual method of abbreviation in writing Latin names for well-known genera and species, or for genera which have been discussed already in any particular paper, is to give the initial letter of the genus instead of the name in full; thus *Elephas maximus*, becomes *E. maximus.* This system can be extended with advantage in the case of subspecies; thus, in discussing the subspecies of the Asiatic Elephant, reference would be made to the Sumatran form as *E. m. sumatranus.* In systematic lists, according to the method introduced by me and approved for such purposes by the British Association Committee on Zoological Bibliography and Publication, this would read: ELEPHAS MAXIMUS Linn. *sumatranus* Temm., but for general purposes the abbreviated form as written above is regarded as more suitable.

Hindu Image from Sarawak.

By J. C. Moulton.

Early in 1921 a very interesting discovery was made at Limbang, Sarawak, by workmen removing the top of a hill near the Residency. They unearthed a small stone image, in remarkably good preservation, of Ganesa, the elephant-headed god of Wisdom. Ganesa or Ganapati, as one of the sons of Siva and Parvati, is one of the most revered gods of the Hindus. In the Hindu-Javanese religion he is Sang Yang Gana. He is the god of wisdom, the remover of obstacles. He is invoked at the beginning of a book and of important undertakings. He is a short fat figure, with protuberant belly, four hands, and the head of an elephant with only one tusk. In one hand he holds a shell, in another a discus, in the third a club or goad and in the fourth a water-lily. Sometimes he is depicted riding upon a rat or attended by one. His temples are numerous in the Dekhan. There are many legends accounting for his elephant head. [1]

The Sarawak image (see illustration) shows the god sitting on the usual lotus cushion. The actual height of the image is 24 inches and the rough stone block on which it rests 12 inches. Mr. F. F. Boult, Resident of Limbang, sent it to the Sarawak Museum, Kuching.

Prof. Dr. N. J. Krom of Leiden University, to whom I showed photographs, when he was on his way through Singapore, tells me that similar images were found on Gunong Kombeng in South-East Borneo some ten years ago.[2] They included a Ganesa, a Brahma and a Siva. He suggested that the Sarawak image was of more direct Hindu origin and therefore probably older (6th or 7th century) than these discovered in South-East Borneo, which were undoubtedly of Hindu origin. A list of all the Hindu images discovered in Dutch Borneo will be found in the " Encyclopaedie van Nederlandsch-Indie " (1919) vol. III, p. 198 under *Oudheden.*

Sir John Marshall, Director-General of Archaeology in India, kindly gives me the following interesting note, from which it will be seen that he suggests a later date for this Sarawak image.

" The image appears to be very similar to the ordinary type of Ganesa in India. The chief distinguishing features of the latter are (*a*) the elephant's head, (*b*) three eyes, (*c*) four arms, the usual symbols in the hands being a bowl of sweets, a rosary, an arc and the detached tusk of Ganesa himself, (*d*) a corpulent belly, (*e*) and a snake doing duty as the sacred thread. In the Borneo image we have the same large belly, the elephant's trunk and a snake for the *yajnopavita.*

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[1] *Vide J. Dowton* "A. Classical Dictionary of Hindu Mythology."

[2] *Oudheid Kundig Verslag* 1914, p. 152.

"Indian images of Ganesa are found seated in three different postures: (*a*) cross-legged, (*b*) one of the knees upraised and the other lying on the throne; (*c*) the right foot overhanging from the throne and resting on the ground and the left leg lying on the throne (*sukhasana*). In *Archaeologisch Onderzoek of Java en Madura,* Vol. II, Plates 40-42 are reproduced photographs of an image of Ganesa from Singasari in Java (now in the Ethnographical Museum of Leiden) which is seated with the right knee upraised and the left leg lying on the seat (surrounded by skulls). But in the Indian Museum there are two (Ja. 5 and 19) images of Ganesa from Java that are seated with the soles of the two feet joined. Photograph of Ja. 19 is enclosed herewith. This posture is un-Indian and appears to indicate a period of time when the Javanese image-makers had outlived the trammels of Indian tradition. In the photograph of the Borneo image the feet are not clear and probably mutilated. But there cannot be any doubt about the posture being the same as that of the two Javanese images of Ganesha in the Indian Museum, that is to say, seated with the soles of the two feet joined. The trunk (sunda) hangs down in a manner which suggests that, as in the Indian examples, it presumably rested on a bowl of sweets. The head-dress appears to be an elaborate conventional form of the jatā, the "matted locks" which Siva wears despite the incongruity in the case of Ganesha! If it is a Jatā, the image must represent Ganesha in an ascetic aspect, seated in meditation. This would explain the contemplative expression. But ascetic and contemplative Ganeshas are not known in India.

"The Javanese images are assignable to the thirteenth century A. D., the age of the Brahmanic temples of Brambanan and Singasari. The Borneo image, which in its posture seems to disclose Javanese influence, is probably to be assigned to about the same epoch but may be somewhat earlier. The earliest Brahmanic inscriptions found in Borneo (published by Vogel in a Dutch Journal of 1917 or 1918) are assigned to the fifth century A. D. This image of Ganesha shows that Brahmanic culture flourished in Borneo for a long period. For further particulars about the types of Ganesha images reference may be made to H. Krishna Sastri's *South-Indian Images,* pp. 165-176, and T. A. Gopinath Rao's *Elements of Hindu Iconography,* Vol. I, Part I, pp. 35-67."

The discovery of this image created great interest in Sarawak. Thousands flocked to the Sarawak Museum to see it. The Museum attendants had the time of their lives seeing that the god disposed of all the offerings made to it.

The accompanying illustration is from an enlarged photograph by Mrs. F. F. Boult, who tells me that she gave another one to the Sikhs in Kuching, at their request, for their Temple.

Notes.

The Malayan Badger.

Dr. W. Docters van Leeuwen, Director of the Botanical Gardens, Buitenzorg contributes the following interesting notes on the Malayan Badger in Java:—

Buitenzorg, 20th May, 1921.

" With much interest I have read your article on the occurrence of the Malayan Badger in Borneo (Journ. Str. Br. Roy. Asiat. Soc. No. 83, 1921, pp. 142-146). This animal is very common in Java and I have seen it or smelt it on every mountain which I have visited. The lowest elevation at which I have seen this animal was 1000 feet on Mount Moeria in Java-central. The last time I saw it on Mount Pangerango, near Buitenzorg, was from an elevation of 4000 feet up to the summit, about 11,000 feet. There it is also common and very tame; in the vicinity of my mountain cabin it seeks the earthworms and insects under the thick moss-cover of the old crater valley. In the neighbourhood of our mountain laboratory at Tjibodas it is also very frequent and more than once we were awakened by the stink of this animal walking under our sleeping room.

" It will interest you perhaps that in this forest there is a kind of fern, which has the same smell as the badger though not so strong, and which is named by the natives the " pakoe sigoeng "; its scientific name is *Didymochleena lunulata* Desv.

" I have had some accidents meeting this animal but never have I felt any ill effect from the anal fluid though it is far from agreeable to be in contact with it. In some parts of Java, especially in the old sultanates it is said that a very weakened solution of the fluid is used as a perfume."

Buitenzorg, 2nd June, 1921.

" In the neighbourhood of Mount Goentoer near Garoet I had once built a small bamboo cabin, with walls of dried grass and about every evening a badger came and looked in one of my open rooms and every night as he walked near the cabin we were awakened by the smell. This stench he bears too, when not irritated, in his hairs, and also the path followed by this animal in the forest is recognisible by the stink. In the forest of Mount Pangerango I have seen the badger often in the first hours of the afternoon, but it is really a night-animal."

Since describing in this Journal the two Bornean skins as a new subspecies, *Mydaus javanensis montanus,* I have examined a third imperfect skin from the Sarawak Museum. It was obtained from the Kalabits of the ulu Baram and almost certainly comes from the same locality as the other two. Unfortunately the Kalabits have made it up as a seat-mat for their own use and consequently cut it down considerably; only the back remains, the head, legs and tail having been cut off. It measures 19 inches by 10½ at the widest part. A comparison of the whitish dorsal marking shows that it must have been similar in size to the other two. The white streak is 3 inches across at the widest, then narrows abruptly and breaks off completely for 3 inches before continuing as a very thin line for another 4 inches, after which it widens to the extent of 2 inches across the lumbar region.

The length of the skin from the widest part of the dorsal streak between the shoulders to the root of the tail is 16½ to 17 inches in all three skins.

The skin representing the Type of this new subspecies has been deposited in the British Museum. The second and third skins remain in the Raffles Museum, Singapore, and the Sarawak Museum respectively. No others are as yet known.

J. C. Moulton.

A Rail New to the Malay Peninsula.

While arranging and naming the collection of Bird skins which have accumulated in the Raffles Museum during the last thirty years, an interesting discovery by which another species is added to the list of Birds known to occur in the Malay Peninsula was made by Mrs. Horton, who has already done much valuable work on the bird collections of this Museum. Among the mass of unidentified material stored away was the skin of a Rail bearing the following label: "Kotta Tinggi, Johore. Dec. 18th 1892. Sex female." This skin proved to be that of Elwes' Crake, (*Porzana bicolor* Walden).

This Crake was first procured by Captain Elwes in the interior of Sikkim at an elevation of 5,000 feet, in September 1870. Godwin-Austen found it in rice-fields about 5,000 feet up in the Khasi Hills in the month of June. Hume says he is sure he saw this species below Hoondoong at a height of 3,500 feet. It was obtained later by Collingwood Ingram in 1906 in the Lichiang Valley, West Yunnan, South China.

The Ruddy Crake (*Limnobaenus fuscus*) which occurs regularly in the Malay Peninsula, is closely allied to and somewhat similar to Elwes' Crake but the latter may be easily distinguished by the grey colour of the head, neck and breast, the Ruddy Crake being uniformly rufous.

There is, however, a slight possibility of a mistake having been made in attaching the original label, as a former Curator of the Raffles Museum obtained several specimens of birds and insects from the Eastern Himalayas and the Johore label *may* have been tied in error to one of this collection. There is no evidence to support this theory, and considering the habits of Rails there is nothing at all surprising in the bird having been found in Johore. The Indian records were made in the summer and our specimen may have migrated here for the winter.

It would, of course, be more satisfactory if this record could be supported by the capture of another specimen in the Malay Peninsula.

J. C. MOULTON.

A Tiger at Sea.

Instances of Tigers swimming across wide rivers or narrow straits are common enough. Tigers are still found occasionally on the island of Singapore where they have arrived from Johore after a swim of one to two miles across the Straits. The following note however of a much longer swim is perhaps worthy of record.

Mr. G. O. Dorrity of Trengganu, to whom I am indebted for the information, obtained the story from an old Malay fisherman in Kelantan some eight years ago. The local fishing fleet was proceeding out to the fishing grounds one night from the coast of Kelantan when a dark object was observed moving about on the surface of the water. The position given was midway between the Perhentian Islands and the mainland, i.e. about five miles from the mainland; the total distance between the mainland and the nearest island of the group is eleven miles. On a closer inspection the object was discovered to be a full grown tiger and evidently in some distress. A *pukat* (seine-net) was thrown over it and the animal, entangled in the mesh, was towed behind a boat until drowned.

It seems impossible to credit this tiger with the deliberate intention of swimming out ten miles to a small group of islands which he could hardly see from the mainland. Probably he was accidentally swept out to sea when attempting perhaps to cross a river at the mouth.

J. C. MOULTON.

Meteorite in Malacca Straits.

On the morning of September 11th about 6.15 a.m., as I was lying in a berth on S. S. "Klang" facing the sea I suddenly saw a large ball of light, of dazzling brightness falling from the sky. Almost simultaneously there was a loud report resembling the firing of a large gun, as the meteorite struck the sea.

It could not have been more than 300 feet away.

The master, Captain MacDonald, stated that it would have sunk the ship had it struck her.

This occurrence took place when we were about one hour out of Port Swettenham on the voyage from Singapore.

A. L. Hoops.

"Berkluat"—A Trengganu Custom.

The offence known is "Berkluat" is peculiar to the state of Trengganu alone in British Malaya. Should a man and woman be seen to exchange an affectionate glance, they may thereupon be arrested without warrant, charged with "Berkluat," and sentenced to as much as 3 months imprisonment. The giving of the "glad eye" is therefore a matter of some danger in Trengganu.

The local dignitaries, who are mostly of Arabic extraction are said to be opposed to the abolition of this charge, though it is a fruitful source of blackmail. As most of these magnates possess a plurality of wives, it is rather pedantic on their part to object to a little ogling between couples of humble origin.

Perhaps they have in mind

"Apa guna pasang pelita
"Kalau tiada dengan sumbohnya?
"Apa guna bermain mata
"Jikalau tiada dengan sunggohnya?"

A. L. Hoops.

Points of the Compass in Brunei Malay.

The Points of the Compass in Brunei Malay have been discussed by Major J. C. Moulton in this Journal No. 83, 1921, p. 75.

The Serang of the s. l. *Brunei* explained the use of the word *Utara* as meaning N. E. by the fact that Malays fix the points of the compass by the winds; *Musim Utara* is the general Malay expression for the N. E. monsoon during which they cannot go out fishing, but if the wind shifts a point north they can, so they have a definite name for this: *Iraga.* And thus avoid confusion with the rightly dreaded *Utara.*

The coast of Borneo runs from S. W. to N. E., so a wind from the open sea i.e. *Angin Laut* would be a N. W. wind and a wind from the west would still be a sea wind *Barat Laut* i.e. from the western sea. The use of *Barat Tepat* for south west is probably a confusion of thought as such a wind would come straight (*tepat*) up the coast.

The other three winds are not sea winds; *Timor* the East is always definite; *Selatan* I don't think I ever heard used; the meaning given in Wilkinson is the wind from the side of the Straits not S. E.

Barat Daya for south might be explained by the meaning of *Daya,* treacherous, deceptive, as a wind partly off the shore would be.

F. W. DOUGLAS.

Kuala Lumpur 16/7/21.

A Note on the Tagals of Sarawak.

The Tagals of whom a few hundred have wandered down into Sarawak territory from British Borneo are a stockily built tribe whose looks and ornaments, tatooing and headress are very similiar to some Dayak tribes. They are renowned amongst surrounding Muruts and others as experts in the art of poisoning. On one occasion I took from a small cloth which was round the neck of a Tagal chief a small piece of wood bound round with rotan and showed it to a Murut chief who asked me as he examined it from whom I had taken it. A native officer standing by mentioned the name of the Tagal chief whereupon the Murut dropped it like a piece of hot coal and nothing would induce him to touch it again. According to several Muruts this small piece of wood was quite sufficient to give a man violent fever.

The Tagals in Sarawak have a very curious form of amusement called "Ungakang." In the middle of their long house verandahs there is a hole about 15 feet by 20 feet let down into the floor with loose spring boards at the bottom into which the young men jump. Then they gradually work up a higher speed, jumping up and down, singing "sembila kun mahor" meaning in Malay "Baik baik kita jalan." When there are sufficient men on the boards and the singing has been going on a while the women dressed in their best jump on and with their hands on each others shoulders slowly lock-step round the jumping men whilst the swaying boards throw them up and down with every other step. This is kept up for hours on end and is a survival of a head dance.

They are very artistic; most of their doors are ornamented with drawings as also are their bamboo pipes, combs etc. Singing is a special forte and some of their chorus songs are very fine and tuneful, quite unlike those of surrounding tribes. They are tatooed they say to act as lights when their eyes are closed in death.

Some Tagals have a story that the origin of Man was from Monkeys and that at one time the people of the world were all male monkeys. Others say that originally the Sun laid three eggs, one white which was a Murut, one green, a Tagal and one Red.

The first man on earth according to many Tagals was set to work making the holes for the rivers to run down. He had seven children, the youngest of whom was drowned in the Runi which was the first river made. Before the holes were made for the rivers, when it rained the water came right up and drove the people on to the top of Mt. Mulok and it was once whilst all the animals and people were up there for a long time that they ran short of food. The other animals talked together and decided to eat the dogs, who, understanding what they said, were very angry and rushed in and bit them and that is why to this day the dog hunts other animals.

When a man dies they put in his mouth a string of beads. The idea is that when he reaches the top of the world and entrance to the dead man's country, he finds it guarded by a snake who demands that a man shall look for its excrement and eat it before he can pass. When therefore the man reached this he bites the beads which make a noise and the snake is hoodwinked and allows them through.

Like other Bornean natives they believe in birds (omens) but many of them only for the first two days of a journey or of work. They blame women for the beginning of head-hunting and blood fueds and like certain other tribes many of the women will not eat deer's flesh as they believe it to be the reincarnation of dead men. Their houses are very strongly built and much more carefully erected than those of the surrounding Muruts. The most favored earring holes are series pierced right round the ears both for men and women.

E. V. Andreini.

Some Notes on Oriental Dragonflies: the Genus *Macromia*.

By F. F. Laidlaw, M.A. (Cantab.)

The following account is the result of a study of examples of some twelve of the Oriental species of the genus, that I am fortunate enough to have before me, apparently a greater number of species than was available to Martin in preparing the Selysian Catalogue of the Corduliinae. Species of the genus are rather scarce in collections, and being at first sight often somewhat uniform in colouring and build, their discrimination is a little difficult.

Dr. Ris, who has the gift of illuminating the dark places of systematic Odonatology, has not very long ago defined a small group of species belonging to the genus (*Suppl. Entomol.* No. 5. pp. 65-70, 1916) using characters that are easily determined and of due importance. He has thereby paved the way for a further grouping of the Oriental, and especially of the Malayan species, such as I attempt here.

Employing characters similar to those made use of by Dr. Ris I arrange the Malayan species in groups, one of which is of course the group already defined by Dr. Ris. This grouping, unfortunately dependant in part on sexual characters, is I think tolerably natural, and should, with the aid of figures given, facilitate the determination of species. It is impossible to provide a satisfactory dichotomic table or key. I therefore give definitions of the groups, and under the heading of each group is added a short but I hope sufficient account of each of the species referred to that group. Fuller notes on the new species and remarks on some of the others, with text-figures, are appended.

The characters relied on for the defining of the three groups of species I note below have already been employed by Dr. Ris in his paper, and suggested by Martin in the Monograph as useful. These characters are: firstly the colouring of the post-clypeus, which may be yellow, or may agree with that of the rest of the front of the head in being reddish brown or dark-brown. Secondly the presence or absence of a *humeral* stripe on the synthorax; note that a *lateral* oblique stripe of yellow is present in all Oriental species of the genus. Thirdly the presence or absence of a flattened, pointed, triangular process on the dorsum of the tenth segment of the abdomen of the male.

Specific characters are: the colour pattern of the abdominal segments, the occurrence of metallic lustre on some of the more basal of those segments, the colouring of the costal nerve, (? occasionally variable), the number of ante- and post-nodal nerves (shown by the "nodal indicator"); size, and lastly the shape of the anal appendages and of the genital structures of the second abdominal segment of the male.

Probably also the shape of the margin of the hind-wing of the male, between the membranule and the anal angle, is of some specific value.

As will be seen from the sequel, the total number of species of *Macromia* from the Orient is not less than eighteen; it will probably be increased considerably in the future. The *Macromias* are handsome, strong-flying insects that will repay careful study in the field, and the difficulty of capturing some of the species at any rate raises their pursuit almost to the dignity of a sport. Kennedy records (*Proc. U. S. Nat. Mus.* 49. p. 313, 1915) that he was compelled to use a shot-gun to obtain his first supply of specimens of the American *M. magnifica* MacL.

Since the publication of Kirby's Catalogue in 1890 the following are the important notices dealing with members of this genus from Indo-Malaya:—

1899. Krüger, L. *Stettin entomol. Zeit.* pp. 324-338.
1906. Martin, R. *Collect. Zool. Selys.* XVII *Corduliinae.*
1916. Ris, F. *Suppl. Entom.* No. 5. pp. 65-71 Taf. iii, figs. 1-4 Text-figs. 42-45.

References to other papers are given where necessary in the text.

I. Group of *M. westwoodi* Selys.

Segments 2-6 of abdomen unicoloured, all with more or less metallic lustre. Front of head uniformly dark brown, but the pyramidal processes of the frons metallic green or violet. Males with pointed triangular process on the dorsum of the tenth segment of the abdomen. Pterostigma small (2 mm. or less).

a. A well-defined humeral band of yellow, incomplete above. Costal nerve with fine yellow line. ♂ Lower anal appendage about equal in length to upper pair. These latter are very slightly recurved apically, and have each a very small, almost obsolete extero-lateral tooth at about the middle of their length.

Length of hind-wing ♂ 46 mm. (♀ 50 mm. Selys).

M. westwoodi Selys.
Perak. Penang.

*a*¹ Lower part of dorsum of synthorax brown, as it passes dorsalwards acquiring a metallic green lustre, but no definite humeral band present. Costal nerve black.

b. ♂ Lower anal appendage almost a third as long again as upper pair, the latter with apices recurved, and with a well-developed extero-lateral tooth on each at about its middle.

Length of hind-wing 40 mm. (♀ unknown).

M. cydippe n. sp.

Borneo. (Banka? Sumatra?)

b[1] ♂ Lower anal appendage about equal in length to upper pair, the latter with recurved apices, and with the extero-lateral tooth so reduced as to be scarcely discoverable.

Length of hind-wing ♂ 43 mm. ♀ 46 mm.

M. euterpe Laidlaw.

Borneo.

II. Group of *M. cincta* Ramb.

Segments 2-6 of abdomen black or brownish-black without metallic lustre. 2-3 at least with yellow markings on the dorsum. Front of head very dark brown, pyramids of frons black, slightly metallic. No definite humeral band on dorsum of synthorax. Costal nerve black. Males with pointed triangular process on dorsum of segment 10 of abdomen.

Pterostigma about 3 mm.

M. cincta Ramb. agg.

III. Group of *M. calliope* Ris (defined by Ris).

Thorax black, with rich metallic lustre, with a humeral band incomplete above. Frons black with metallic lustre, ante-clypeus black or dark brown, post-clypeus (except in one or two species) yellow. Costal nerve usually entirely black. Segments 2-6 of abdomen black (or in one or two species metallic), the second segment at least with yellow markings on the dorsum. ♂ without dorsal process on the tenth segment of the abdomen. In most species the upper anal appendages straight or incurved apically.

a. ♂ Post-clypeus dark brown, segments 2-6 of abdomen with metallic green lustre, unmarked save for a pair of small transverse spots on 2. Upper anal appendage with extero-lateral tooth near the apex, which is rather abruptly inflected. Lower appendage of about equal length. Distal third of genital hamule abruptly narrowed, slender, sickle-shaped. Hind-wing ♂ 34 mm. (♀ unknown).

M. corycia n. sp.

Borneo.

a[1] Post-clypeus pale yellow; segment 2 of abdomen with yellow ring, narrow dorsally and not covering the base of the segment, whilst 3-5 have small paired spots dorsally immediately in front of the transverse carina of each, (those on 4-5 very small). Segment 7 with yellow ring occupying its basal third, 8 with small pair of basal dorsal spots. ♂ upper anal appendages slightly incurved apically, with extero-lateral tooth at commencement of distal third; lower appendage slightly shorter. Distal quarter of genital hamule abruptly narrowed, hook-shaped. Hind-wing ♂ 35 mm., ♀ 40 mm.

M. urania Ris.
Tonkin.

a^2 ♂ Post-clypeus pale yellow. Segment 2 of abdomen with yellow ring, narrow and not touching base of segment dorsally, 3 with minute yellow spot dorsally on either side of the middle line in front of the transverse carina. Upper anal appendages nearly straight, extero-lateral tooth at commencement of distal third. Lower appendage about equal in length. Genital hamule long and slender, almost straight.

Hind-wing ♂ 31.5 mm., ♀ 34 mm.

M. callisto n. sp.
Malay Peninsula.

a^3 ♂ Post-clypeus black with small yellowish spots on the two small depressions immediately below the frons. ♀ Post-clypeus yellow. Basal yellow ring on segments 2 and 7, that on the second segment however is dark apically. That on the seventh covers a little more than the basal quarter of the segment. Segments 3-6 with paired dorsal lunules of orange-brown in the female, progressively smaller backwards, and minute on the sixth segment; in the male segments 4-6 entirely black, but in specimens examined by me the lunules are present on 4-5. Segment 8 entirely black. ♂ Upper appendages nearly straight. Extero-lateral tooth stout. Lower appendage a little longer. Distal two-thirds of genital hamule slender, sickle-shaped.

Hind-wing ♂ 37 mm., ♀ 40 mm.

M. calliope Ris.
Tonkin.

a^4 ♂ Post-clypeus yellow. Basal yellow ring on segments 2-7, that on the second segment covering its basal half at least, that on the seventh about the basal third. Segments 3-6 with paired dorsal lunules immediately in front of the transverse carina, 8 with paired basal spots. ♂ Upper anal appendages nearly straight, stout extero-lateral tooth, just beyond the middle of each, genital hamule slender, straighter than in the last species but otherwise rather similar.

Hind-wing ♂ 39 mm.

M. fraenata Martin (?)
Khasi Hills, Tonkin (Corea?)

In addition Dr. Ris allots to this group two other species, *M. clio* Ris, from Formosa, a large, very distinct species (♀ h. w. 47 mm.) known only from the female sex, characterized by the possession of large basal yellow markings on segments 3-6 extending to the transverse carina; and *M. amphigena* Selys, a large species from Japan (♂ h. w. 45 mm).

Macromia westwoodi Selys (Fig. 1.)

1 ♂ Maxwells's Hill, Perak. (Raffles Museum, Singapore).

The specimen unfortunately lacks the head. I feel sure that it is the true male of this species, and that the sex has not hitherto been described, the males attributed to it by de Selys and Kruger belonging in my opinion rather to the next species or an allied form. The present specimen shows much less discrepancy in size with the type female as far as de Selys' measurements go, and the locality is of course a likely one.

Wings colourless, save for a slight tinge of yellow near the anal angle. This latter is rather rounded, and the anal margin of the wing between the membranule and the angle itself is deeply concave. Costal nerve marked with yellow. Nodal indicator $\frac{10}{11}\ \frac{51}{9} \mid \frac{15}{10}\ \frac{9}{11}$ Pterostigma 2.5 mm.

The yellow mark on the base of segment 7 of the abdomen occupies its basal quarter.

The sides of the first and second segments are brown in colour shading gradually into the metallic green of the dorsum. The dorsal process on segment 10 is small and lies near the base of the segment.

The extero-lateral tooth of the upper anal appendage is much reduced.

The genital lobe of the second segment carries a stiff brush-like bunch of hairs, directed forward, at the apex. The genital hamule is short, not extending to the apex of the lobe, and is comparatively broad.

Length of abdomen ♂ 45 mm + 2.75 mm. (♀ 50 mm. Selys).

Macromia cydippe n. sp. (Figs. 2-3).

1 ♂ Lio Matu, Sarawak, Borneo, Oct. 1920. (coll J. C. Moulton) The specimen is the Type.

With this male I think it probable that the ♂ from Banka referred to *M. westwoodi* by de Selys, and the specimens recorded from Sumatra under the same name, are conspecific.

Wings distinctly smoky especially at the apices. Pterostigma 2 mm. long. Nodal indicator $\frac{7}{10}\ \frac{15}{10} \mid \frac{15}{10}\ \frac{7}{10}$. Anal angle not acute. Margin between membranule and angle slightly concave.

The lateral yellow band of the synthorax is pale cream-yellow in colour and sharply defined. The yellow ring on the seventh segment of the abdomen occupies the basal fifth of the segment.

The lower anal appendage has a length of 2.8 mm. The upper pair are decidedly shorter, being barely 2 mm. long. Each has a well-developed extero-lateral tooth just before its middle, and the apex of each is recurved.

The genital lobe of the second segment is small, and the genital hamule is small and nearly straight, not unlike that figured by Ris for *M. terpsichore* Forster, though relatively smaller.

Length of abdomen 42.5 mm. + 2.8 mm.

♀ unknown.

Type in British Museum ex coll. Raffles Museum, Singapore.

Macromia euterpe Laidlaw.

M. euterpe Laidlaw (*Proc. Zool. Soc. London* 1915, pp. 26-29. Text-figs. 1, 2.) This species has the anal angle rounded, and margin of the wing between the membranule and the angle deeply concave as in *M. westwoodi,* in the male.

The dorsum of the second segment is also much more densely covered with hairs than in the two species of the group already noticed. The pterostigma is about 1.75 mm.* The genital lobe is very small, and the hamule is short stout and well curved.

Nodal indicator $\frac{14}{9}\ \frac{10}{11} \mid \frac{15}{9}\ \frac{10}{10}$.

I have before me the paratype ♂ from Mt. Kinabalu.

Two other species appear to fall into this group, viz, *M. terpsichore* Forster and *M. melpomene* Ris. Both are from N. Guinea. (See Ris in *Nova Guinea* IX, *Zool.* 3, pp. 494-497, figs. 13-17. and *idem, Nova Guinea* XIII *Zool.* 2. pp. 84-85, figs. 2-3.)

Both these species differ from the more western members of the group in having the pterostigma exceedingly small, only 1. mm. long.

Macromia cincta Ramb. (? local race) (Fig. 4).

1 ♂. Sarawak, Borneo. Coll. J. C. Moulton.

The specimen agrees in the main with de Selys' account of this species. I have not been able to see Rambur's original descrip-

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*Not 2.5 mm. as originally stated (Laidlaw *loc. cit.*)

tion. It shows some differences in detail which may be characteristic of a local race of the species, or may be due to age and loss of markings in preservation.

The specimen before me is fully adult.

Wings almost colourless save for a very small dark brown mark at their bases, extending from the costa to the median vein, and in the hind-wing reaching distally nearly as far as the first ante-nodal cross vein, in the fore-wing it is only half as extensive. Pterostigma 3 mm. long, black. Costal nerve black. Membranule greyish-white, anal angle very acute, a slight yellow tinge about the angle.

Nodal indicator $\frac{7}{10}\ \frac{17}{11} \mid \frac{18}{12}\ \frac{7}{10}$. Length of wing 46 mm.

Front of head uniformly blackish-brown with a slight lustre which is more marked on the upper part of the frons.

Synthorax dark-brown with green and violet reflex. No humeral stripe. Lateral stripe, covering the stigma pale, buff-yellow. The brown ground colour deepens to black immediately on either side of this stripe, and is here more richly metallic. There is also a small lateral ventral mark of buff-yellow on the metepimeron not quite terminal.

Abdomen dorsally black, or brownish-black; dark brown ventrally and on the sides of the first and second segment. The second segment has transverse band of a creamy yellow colour running across the dorsum from one auricle to the other not touching the base or apex of the segment.

The third segment has a dorsal spot of the same colour immediately in front of the transverse carina, divided into two by the longitudinal median carina. Below it is creamy-white.

Segments 4-5 have small paired lunules similarly placed but of a darker yellow, whilst 6 is entirely black.

The seventh segment has a small basal yellow mark on the dorsum occupying only about one-eighth of the length of the segment. The remaining segments entirely black.

Anal appendages very dark brown, exactly corresponding to de Selys' description.

The genital lobe of the second segment is small. The hamules are slender, boldly recurved apically so as to be hook-like.

The tenth segment of the abdomen has a sharply pointed dorsal prominence.

I believe that *M. borneensis* Kruger and *M. pyramidalis* Martin, are probably members of this group. I have not seen examples of either.

As a special feature (possibly found in all the males of this group, as I have seen it in *cincta* and in no other Oriental groups) I would call attention to a curious thickening of a small part of the ventral margin of the tergite, close to the anterior end of the segment. This thickening of the margin is about a millimetre in length and is beset with a few very stiff short hairs. It is quite a definite structural feature and possibly serves some purpose in connection with the genital structures of the segment.

Cincta and its allies seem to form a distinct group of rather large species, characterized not only by peculiarities of coloration but also by the relative large size of the pterostigma, and by certain secondary sexual characters. The group appears to be confined to Malaya and Indo-China.

Macromia corycia n. sp. (Fig. 5.)

1 ♂. Ulu Baram, Sarawak, Borneo 3. xi. 20., coll. J. C. Moulton. The specimen is the Type.

Wings colourless. Pterostigma 2 mm. black. Costal nerve black. Nodal indicator $\frac{6}{10}\ \frac{15}{10} \mid \frac{15}{9}\ \frac{6}{10}$

Upper lip black, shining, almost metallic, ante- and post-clypeus very dark brown, the latter with the two small pits immediately below the frons, coloured a little paler. Frons entirely metallic violet. Synthorax brilliant metallic green, the yellow markings rather of a buff-colour. Abdomen slender, segments 2 and 7-9 moderately inflated. Small transverse marks on the dorsum of the second segment, at about its middle, of pale yellow. Sides of the segment brown passing indefinitely into green above.

Basal mark on 7 orange-yellow, occupying rather less than the basal quarter of the segment. Segments 7-10 black.

Anal appendages blackish-brown, upper pair 2 mm. long: lower appendage a shade longer. The upper pair are very similar in shape to those figured by Ris (*loc. cit.* Fig. 42.) for his species *M. urania.*

Type specimen in British Museum ex coll. Raffles Museum, Singapore.

This beautiful little species is readily distinguished from its allies by the dark colouring of the post-clypeus, and by the absence of any markings on the abdomen save on the second and seventh segments. Its nearest relations would seem to be *M. urania* Ris and *M. callisto* n. sp.

Macromia callisto n. sp. (Fig. 6.)

Macromia gerstaeckeri Laidlaw (nec Kruger) *Proc. Zool. Soc. London* 1902 pp. 76-77.

1 ♂ 1 ♀ Kuala Aring, Kelantan, Malay States, coll. F. F. Laidlaw (Skeat. Exp.) Types ♂ and ♀ in Mus. Comp. Anat. Cambridge.

Though bearing a close resemblance to *M. gerstaeckeri* Kruger this species differs in that, whilst Kruger's species has a prominence on the dorsum of the tenth segment of the male, *callisto* is entirely without this structure.

Kruger's account of his species *gerstaeckeri* is sufficiently definite in this respect. He says of the tenth segment of the abdomen that it is *"vorn abgeschrägt und zeimlich tief gefurcht, der Rüchen erhebt sich nach hinten zu einem stumpfen Höcker."*

It is certain that this description cannot apply to *M. callisto*, and as I believe the character to be of importance I feel justified, after having had an opportunity of making a fresh study of my specimen, in giving it a name. It differs also a little in size being distinctly smaller than *gerstaeckeri*; it is in fact the smallest of the Oriental species of the genus. Other differences are noted below.

♂ (specimen rather immature) wings slightly and evenly tinged with brown. Pterostigma 1.75 mm. brown. Costal nerve black. Nodal indicator $\frac{5}{8}\ \frac{15}{11} \mid \frac{14}{11}\ \frac{5}{7}$. The number of post-nodals in the hind-wings is smaller relatively to the number of antenodals than in the case of any of the other species I have examined. The anal angle is not very acute, and the anal margin of the wing, between the grey membranule and the anal angle, is straight. (*M. gerstaeckeri*: *"Der Analrand der Hinterflügel ist zwischen der weislichen Membranula und der Analecke dadurch ausgebuchtet, daos die Randader des 2-zelligen Analdreiechs hier wellig vorspringt."*)

Abdomen dark brown (probably black in mature examples, and may have some metallic lustre). The second segment has a ring of yellow, not reaching its proximal border. The third has two minute spots on either side of the mid-dorsal line immediately in front of the transverse carina.

Segment 7 has a basal yellow ring, occupying the proximal fifth of the segment.

Colouring of *M. gerstaeckeri* similar but the mark on the second segment is broken into dorsal and lateral parts, and there is a basal lateral mark on the eighth segment.

Macromia fraenata Martin (?) (Fig. 7.)

1 ♂ Khasi Hills (purchased, no other data). In my collection.

Identity doubtful. Agrees fairly well with Martin's description so far as colouring goes, but not with his coloured figure, which again is not altogether in agreement with his account of the species. Further the anal appendages are unlike those figured in certain respects. But as his figure here also does not altogether fit his description, I think it wise to refer the specimen here provisionally, noting further a wide difference in habitat. *Fraenata* is recorded from Tonkin and Corea, but I cannot help thinking the latter locality unlikely.

Wings slightly tinged with yellow brown at the extreme bases. Pterostigma 2 mm. Nodal indicator $\frac{8}{10}\ \frac{15}{10} \mid \frac{15}{10}\ \frac{9}{10}$ Costal nerve with brownish-yellow line.

Anal angle not acute. Margin between distal end of membranule and angle slightly concave. Membranule grey-brown. Lobes of lower lip yellow, marked with brown medially.

Upper lip black, with transverse bar of yellow at its base. Ante-clypeus black, post-clypeus yellow. Frons metallic violet. Synthorax metallic green or violet, humeral stripe extending rather more than half-way up the dorsum. Lateral yellow stripe over the stigma broad (1. 75 mm.)

Abdomen, segment 1, basally brown passing gradually to black distally, both on the dorsum and at the sides. Second segment yellowish-brown as far as the transverse carina, the yellow extends beyond this mid-dorsally and mid-laterally almost to the apex of the segment. (In this respect the specimen differs both from Martin's coloured figure and description).

Segments 3-6 with paired yellowish-brown lunules on the dorsum of each segment, immediately in front of the transverse carina progressively smaller from before backwards. (Here the specimen resembles Martin's coloured figure but differs from his description). Segment 7 with a basal yellowish-brown ring, covering almost the basal third of the segment, prolonged mid-dorsally to a point at about the middle of the segment. The eighth segment has a pair of basal dorsal lunules.

In addition the third segment has on either side a small basal lateral spot, and the eighth segment has a lateral ventral streak of the same colour basally. Abdomen otherwise black. Segments 2-3 and 7-8 moderately dilated.

Anal appendages black, upper pair straight, apically acuminate. Each carries an extero-lateral tooth a little beyond its middle. Lower appendage sub-equal, with very slight upward curve. Genital lobe of second segment small, pointed, directed backwards. Genital hamule, slender, tapering irregularly, nearly straight, directed backwards.

The specimen differs lastly from Martin's coloured figure of *fraenata* and resembles his description in having the frons entirely black, with metallic reflex.

Length of abdomen 47 mm. + 2.5 mm., of hind-wing 39 mm.

Macromia urania Ris

I possess a single male of this species, from Tonkin, acquired many years ago through Dr. F. Förster.

It agrees closely in all respects with Dr. Ris' account of the Type.

Nodal indicator $\frac{7}{9}\ \frac{16}{11} \mid \frac{16}{11}\ \frac{6}{9}$

Macromia calliope Ris

2 ♂ ♂ 1 ♀ Tonkin per Dr. F. Förster (The female is the allotype).

The males agree exactly with Ris' description of the Type except that both have quite definite lunules on segments 4-5 of the abdomen, in each segment immediately in front of the transverse carina. This is a character which may well depend on the state of preservation, and even on the age of the individual; I do not regard it as being of much importance. Both males are in good condition, and appear fully mature.

The female is distinctly larger. The post-clypeus is of a dull yellow colour, except immediately above the ante-clypeus, where it is narrowly lined with black. The synthorax resembles that of the male but the yellow colouring is duller than in the other sex. The abdomen is marked as in the male, but the sixth segment (like the fourth and fifth) has a pair of lunules in front of the transverse carina. In this case they are very small. The eighth segment lacks the ventral lateral yellow marks found in the male.

Nodal indicator $\frac{8}{11}\ \frac{19}{13} \mid \frac{19}{13}\ \frac{8}{11}$.. Length of pterostigma, 2.4 mm., of hind-wing 41 mm., of abdomen 47.5 mm.

My specimens are without any yellow line on the costal nerve.

In addition to the fore-going I have been able to examine specimens of *M. moorei* Selys, *M. cingulata* Ramb. and of *M. flavicincta* Selys, from India.

There remain to be noted the following species from Malaya of which I have not seen examples:—

M. fumata Kruger. Front of head unicolourous, no humeral stripe on synthorax, no spine on dorsum of tenth segment of male. Described from Java, apparently related to *M. moorei.*

M. gerstaeckeri Kruger. Post-clypeus yellow, a humeral stripe on the synthorax, a spine on the tenth segment of the male, Java.

M. septima Martin is from Tonkin; not sufficiently characterized.

[I have seen examples of the larvae of *M. flavicincta* Selys, from India; they do not appear to differ except in detail from those of American species, and certainly do not approach those of the genus *Azuma* (*Epophthalmia*)].

Thus one can now give the following as the list of Bornear species (cf. Laidlaw *Proc. Zool. Soc. Lond.* 1920. p. 318)

M. cincta Ramb. (forma).
M. cydippe n. sp.
M. corycia n. sp.
M. euterpe Laidlaw

and with some doubt,

M. borneensis Kruger
M. westwoodi Selys
M. gerstaeckeri Kruger.

Whilst for the Malay Peninsula I can record only—

M. westwoodi Selys and *M. callisto* n. sp.

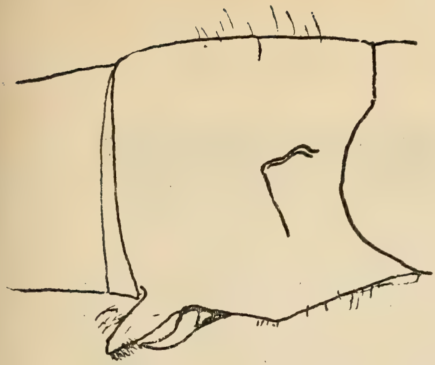

Fig. 1. Lateral view of second abdominal segment of *M. westwoodi* Selys ♂.

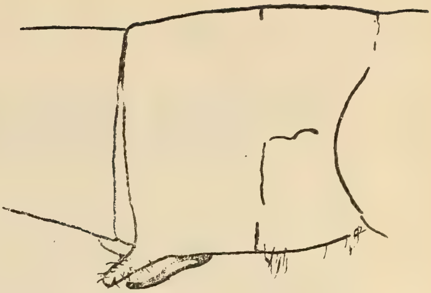

Fig. 2. Lateral view of second abdominal segment of *M. cydippe* n. sp. ♂

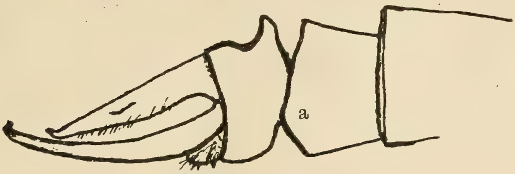

Fig 3. Apex of abdomen of *M. cydippe* n. sp. ♂. a indicates the thickening of the margin seen from the side.

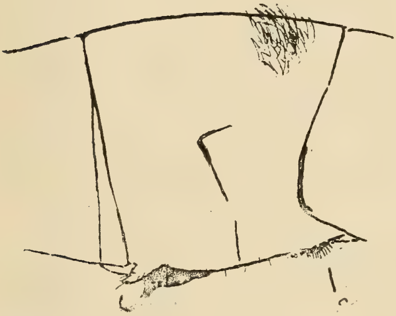

Fig. 4. Second segment of abdomen of *M. cincta* Ramb. ♂ from the side.

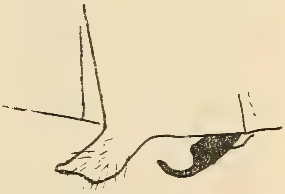

Fig. 5. Genital structures of second segment of abdomen of *M. corycia* n. sp. ♂. lateral view (somewhat distorted by pressure).

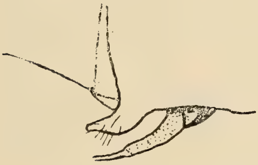

Fig. 6. Lateral view of genital structures of second segment of abdomen of *M. callisto* ♂. n. sp.

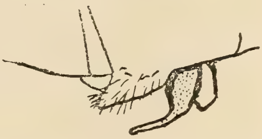

Fig. 7. Lateral view of genital structures of second abdominal segment of *M. fraenata* Martin (?) ♂.

Genitalia of Malaysian Odonata.

Protective Devices by Lycaenid Butterflies Against the Attacks of Lizards and Birds.

By C. L. Collenette.

Among the subfamilies composing the Lycaenidae, commonly called the "blues," there are several which show a conspicuous eye-spot on the margin of the underside of the hind wing, coupled with a pair of tails, or often two pairs of tails, of varying length and thickness.

When the butterfly is at rest with wings closed, the tails are in many cases crossed the one over the other and kept in motion by an irregular rotatary movement of the hind wings. In other species the tails are long and fragile and are stirred by any breeze which is blowing. Again in other species the tails are short or absent but the eye-spots conspicuous. The wings are in some cases slightly separated, which throws a shadow between, giving an appearance of breadth when viewed from behind.

This device has been generally attributed to an imitation, perfected by natural selection, of the head or in many cases the head and antennae, the enemy being led to attack the brittle hind wings, which break and allow the butterfly to escape. This has been noted by many writers and is usually referred to as being a protection against insectivorous birds, although other enemies are frequently mentioned. It would appear, however, that in Malaya the device is directed not so much against birds as against wingless foes, chief among these being lizards.

The device of eye-spots and tails is not shown in many families of Malayan butterflies, and in no other is it brought to such a state of perfection.

Many species of Lycaenids, in contradistinction to the majority of butterflies, pass their lives close to the ground rather than at the tops of the trees. When disturbed, they rely on a short flight of a few yards and a "disappearance" by alighting suddenly on a leaf, when their closed wings render then inconspicuous. On a number of occasions I have followed up some of the commoner Lycaenids, putting them to flight and watching their actions, and on no single occasion has the butterfly alighted out of reach of my net, the usual height being 4 ft. to 6 ft. It therefore follows that enemies against which these insects must protect themselves hunt in bushes as well as in trees.

Birds are not common in the lower depths of the jungle, and Lycaenids inhabiting paths shut in by trees would be largely free from their attentions. Lizards, however, would appear to be quite as common at low elevations as among the tree tops.

The majority of lizards appear to catch their prey by the use of sight only. They approach, often from a considerable distance, at a fairly rapid rate, ending with a cautious "one foot at a time" advance, and a final swift grab at the insect.

A lizard would in most instances approach the insect from a branch, eventually climbing out from the base of the leaf on which it had settled. A bird would either catch a butterfly in flight, (unlikely in the case of the Lycaenids), or would make a quick peck at one which settled near to its perch. It does not appear possible that a bird could make a sufficiently quiet approach to stalk a Lycaenid successfully.

As the result of a number of observations, I find that some species of Lycaenids show a certain amount of discrimination in settling. They choose an exposed position rather than one among the leaves and usually the upper side of the leaf. The position is generally near the centre of the leaf, and the head of the butterfly in perhaps 90% of cases is lower than the tail. The point of the average leaf being lower than the fixed end, it follows that the butterfly presents its protective apparatus to the end of the leaf which is attached to the branch. This appears to indicate that the dangers to be avoided come from the bush rather than from the air.

I have never seen a jungle lizard in the act of catching a butterfly. However, the common Chi-chah of the houses (*Hemidactylus frenatus*), although principally a night feeder, offers an opportunity for experiment. I have on several occasions liberated Lycaenids in a room at night, but on account of the jolting received on the way home or perhaps the absence of daylight, the butterfly generally flutters to a wall and remains absolutely still, without any rotation of the wings. Chi-chahs as a rule take no interest in an insect which they do not see in motion, and if the butterfly is disturbed with a stick, the Chi-chahs usually take fright and refuse to feed.

In Penang, in January 1921, I liberated 17 Lycaenids. There were several other insects in the room, attracted by the light and the Chi-chahs had already dined and were not very active. Three of the butterflies were attacked. One was taken by the head and eaten. Two were attacked from the tail, but in both cases the snap missed the butterfly entirely and it escaped. It is difficult to make this experiment in Singapore, as suitable butterflies are not very common.

The proportion of Lycaenids showing this protective device, which are deficient of part of the hind wings, is relatively large, and in worn specimens which have been flying for some days, might be put as high as 10%. The broken portion generally resembles the rounded shape of a lizard's mouth rather than the sharp bill of a bird, and it can be demonstrated with forceps that the wings will fracture where gripped, and not naturally with a rounded shape.

It appears to me that the Lycaenids showing this device are protecting themselves against lizards rather than against birds, and it would be interesting if observations on the subject could be collected.

Recent Books on Malay.

Risalat Hoekoem Kanoen ja-itoe Oendang-Oendang Melaka edited by Dr. Ph. S. van Ronkel (Brill, Leiden, 1919). This is an authoritative text of the Malay Laws of Malacca, of which an abstract is given in Newbold's history of Malacca (Vol. II pp. 231 *et seq*). It is particularly valuable because Malay "Codes" deserve more comparative study than they have hitherto received and especially comparison with such Indian "Codes" as are to be found, for example in the *Ain-i Akhbar* and *Tarikh-i Tahiri.*

Maleisch Woordenboek (*Maleisch-Nederlandsch and Nederlandsch-Maleisch*) by Dr. Ph. S. van Ronkel (Gouda, 1918). This is an excellent little dictionary, which the author modestly describes as the first dictionary printed in the Dutch official spelling, though it has many other good points such as scholarly accuracy and arrangement to recommend it. It will be to Dutch scholars what Wilkinson's and Winstedt's abridged dictionaries are to us.

Supplement-Catalogus der Maleische en Minangkabausche Handschriften in de Leidsche Universiteits-Bibliotheek by Dr. Ph. S. van Ronkel (Leiden 1921). This is a supplement (316 pp.) to Dr. Juynboll's well-known Catalogus of the Leyden Library (1899) and is worthy to stand beside it and van Ronkel's own Catalogue of Malay MSS. in the Batavian Society's Library. Many of the new MSS. here catalogued came from Ophuijsen's and Snouck Hurgronje's collection. Two MSS. of the *Ht. Bayan Budiman* are here recorded and one of the *Puspa Wiraja,* of which Dr. Winstedt (Journal 83, p. 96) knew only one MS. There are a number of valuable works on Islam and mysticism in the Snouck Hurgronje collection. The book will be of incalculable service to all serious students of Malay.

Wir Menschen der indonesischen Erde by Renward Brandstetter (Luzern). This comparison of the "souls" of two peoples, the Indonesian and the Indogermanic is a sequel to the author's valuable studies of Indonesian philology, familiar to English readers from Mr. C. O. Blagden's translations of several of the best known.

Pantoen Mĕlajoe issued by the *Balai Poestaka* (Weltevreden, 1920). This is a fine collection of Malay quatrains, the Dutch counterpart of the book published by Messrs Wilkinson and Winstedt, now out of print. The collection will be of value for comparative purposes, especially for comparison with the Peninsular collection just mentioned.

Kitab Loghat Mĕlayu by R. O. Winstedt D. Litt. and Ibrahim bin Dato' Muda, Linggi (Singapore, 1921). A dictionary in Malay for Malays, the first that has appeared in the Peninsula since the old *Kamus Mahmudiah,* long since out of date. It is one of the series of Dr. Winstedt's works, prepared for the use of vernacular schools and colleges. It has been favorably reviewed by Mr. C. O. Blagden in our parent Journal.

Kitab Tawarikh Mĕlayu, third edition by R. O. Winstedt D. Litt. (Singapore 1921). This is a revised edition of a Malay history for Malays, which has excited much interest in the vernacular press.

Dictionary of Colloquial Malay (*Malay-English and English-Malay*) by R. O. Winstedt (Singapore 1920). This is the first concise colloquial dictionary of Malay by an Englsh scholar and is companion to the author's "Colloquial Malay," of which a new edition appeared in 1920. Mr. Blagden has reviewed it in our parent Journal (October, 1921).

An Abridged Malay-English Dictionary (Romanised) by R. J. Wilkinson C.M.G., (Singapore 1919). A second and revised edition of a book which has been in the hands of all English students of the language since 1908. There "will be found a fair sprinkling of new words, a great number of closer definitions of meaning and a few corrections."

Misa Mĕlayu with introduction and notes and edited by R. O. Winstedt (Singapore 1919). Vol. 15 of the Malay Literature Series, published by the Methodist Publishing House. It is an 18th century history of Perak and it is surprising that no text of such an interesting Malay historical work has hitherto appeared. Not only does it throw light on Malay life of the period but also on Perak's relations with the Dutch. Dr. Winstedt's text is based on three MSS. and there is another at the Hague.

Hikayat Bayan Budiman atau Chĕrita Khojah Maimun edited with introduction and notes by R. O. Winstedt, D. Litt, Oxon. (Singapore 1920). This is vol. 16 of the Malay Literature Series and is the first complete text of the Malay version of the Persian *Tutinameh,* known in England as "Tales of a Parrot." Dr. Winstedt's text is based primarily on two MSS. of the tale in Raffles Library, Singapore. He also prints the oldest MS. of the Malay version, the fragment now in the Bodleian Library, which belonged formerly to Edward Pococke and dates from about 1600 A.D. This volume should interest many Oriental scholars.

A History of the Peninsular Malays with chapters on Perak and Selangor by R. J. Wilkinson C.M.G., (Singapore 1920). This is a revised and enlarged edition of "History, Part I," printed in 1908 in "Papers on Malay Subjects." "Research has added to our knowledge of early Malay history and the last four chapters embody hitherto unpublished results of original study." Especially interesting is the chapter on the murder of Mr. J. W. Birch and the events leading to the Perak war. Mr. C. O. Blagden has drawn attention to some inaccuracies and criticizes the author's failure to give references in our parent Journal (*J. R. A. S. October 1921*).

Johol, Inas, Ulu Muar, Jempul, Gunong Pasir and Terachi: their History and Constitution by J. E. Nathan and R. O. Winstedt (1920). This is the last but one of the second series of "Papers on Malay Subjects," which owed their inspiration to Mr. Wilkinson originally. This volume gives the latest theory as to which States composed the ancient Negri Sembilan. It also gives much information invaluable to government officers stationed in Negri Sembilan to-day. This book also Mr. Blagden has reviewed.

Perak Malay by C. C. Brown (Calcutta 1921, published for the Committee for Malay Studies, Kuala Lumpur). This is the latest volume in the Second Series of "Papers on Malay Subjects." It is without question the most valuable and scholarly study of any Peninsular dialect that has yet appeared. It is to be hoped that there may be found students to write similar brochures, say, on the dialects of Kedah, Kelantan, Trengganu and Negri Sembilan. One of the dialogues was written by H. H. the Sultan of Perak, and the Raja di-Hilir (Raja Chulan) assisted the author to read the proofs. The 29 dialogues in the Perak River vernacular are prefaced by a scholarly introduction. 'To Lambok (p. 68) is referred to, if my memory serves me, in "Notes and Queries" of this Society: he was a not very remote Kinta chief and will be found in Dr. Winstedt's "Perak Pedigrees."

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Roy

In the footnote on p. 271 for "at the time of the murder of Motley" *read* "at the time of the removal of Motley to Banjermassin" and for 1859 *read* 1854, and in line 8 cross out the words "when alive". These mistakes arose from misreading the communication referred to in the footnote.

As Motley's Labuan herbarium was sold to Barber before Motley left Labuan for Banjermassin, the suggestion on p. 273, that the locality Lubok Dana where he collected *Pachynocarpus umbonatus* might be on the Sungei Banyu Irang, cannot be upheld.

PRIN

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A general account of the Geology of the Malay Peninsula and the surrounding countries, including Burma, the Shan States, Yunnan, Indo-China, Siam, Sumatra, Java, Borneo and other Islands of the Dutch East Indies.

By

E. S. Willbourn,

Assistant Geologist, Federated Malay States.

Introduction.

This account is a digest of the writings of many geologists. It would occupy too much space for me to detail all of them, but most of my information was derived from the following:— La Touche on the Northern Shan States, Middlemiss on the Southern Shan States and Karenni, Coggin Brown on Burma and Yunnan, Résultats de la mission géologique et minière du Yunnan méridional. Sept. 1903—Jan. 1904, Situation de l'Indo-Chine de 1902-1907, Scrivenor on the Malay Peninsula, Molengraaf on Borneo, Van Cappelle on the West Coast of Sumatra, Wing Easton on West Borneo, Verbeek on the Moluccas, Amboyna, Banka, and Billiton, and various authors in the *Jaarboek van het Mijnwezen in Nederlandsch Oost-Indië.*

The area dealt with includes Burma, the Shan States, Yunnan, Siam, Indo-China, the Malay Peninsula, Sumatra, Java, Borneo, and the intermediate islands. Unfortunately, the most satisfactory method of presenting a general idea of the geology, namely to prepare a geological map and to base the discussion on it, is not available, because the geological structure of most of the countries has not been mapped. In spite of this, enough is known, even in the least known regions, such as Yunnan, and parts of Indo-China, to compare the rock formations of any particular period in the different countries, and from the present features it is possible to trace the effects of certain wide-spread earth-movements which have affected all the countries in the area, and to compare them with the effects on neighbouring lands.

Large gaps occur in our knowledge of the area, so blanks must exist in our comparison of the structure of the different countries. It must be admitted, however, that these gaps are not always the result of imperfect knowledge of the countries in question, for, in more than one case, geologists are at a loss to account for phenomena in countries where the structure is known in considerable detail. For example, no explanation has yet been given of the recently extinct volcanoes which occur in a belt of Tertiary beds in Burma, between the Irrawaddy and the Shan States. If they were situated near the great fault-plane which passes from north to south many miles to the east, their presence could easily be explained, but their occurrence in Tertiary beds, so far from this great fault, is a mystery.

Earth Movements.

The geographical and geological features of the area were established as the result of folding-movements of at least three different periods, but the earth-movement in the late Mesozoic period (Hercynian), and the Tertiary earth-movement, which affected Europe, North Africa, and the other parts of Asia, have had a more widespread effect on our area than the earliest one. Folding movements before the Mesozoic period took place on a large scale only in the northern part of the area, Indo China and probably Yunnan, although the presence of fragments of granite in volcanic ashes and tuffs in Singapore, probably older than the Mesozoic granite of the Malay Peninsula, and the Palaeozoic granite, older than Permian, alluded to by Verbeek in describing the geology of Amboyna, are indications that this earth-movement took place to some extent also in the Malay Peninsula and East Indies.

The influence of the later movements is very marked in all of the countries under consideration, and successive parallel mountain folds, arranged roughly *en échelon*, can be traced through the area, beginning in the northwest, near Tibet, at the eastern end of the huge Himalayan mountain range. To these folds Suess gave the name "Coulisses," and, talking of our area, he says, "Then, in "the Shan States of Burma, several of the coulisses which approach "from the north and northeast disappear beneath a karst-like "plateau of Palaeozoic limestone, which is folded and owes its "tabular form to denudation. Fresh coulisses make their appear-"ance in the south and form the Malay Peninsula.......“In this "way the mighty swell of the Altaides in Thibet subsides and is "dispersed. The whole continent becomes lower. Many coulisses "disappear. Only a few long branches are continued ‘on the east "into the cordillera of Annam; on the west, always giving rise to "fresh coulisses, through the Malay Peninsula, and still further, "to Java and beyond."

The most prominent coulisse in the western part of the area is the Naga-Arakan-Andaman-Nicobar-Barissan fold, with its axis extending from Upper Burma in the northwest, running south through the Andaman Islands, and the Nicobar Islands, and turning east through Sumatra and Java. Another important coulisse can be traced as the Main Range in the Malay Peninsula, through Singkep and Banka, and the result of the earth-movement which caused this particular fold was the intrusion of the Mesozoic granite, accompanied by the mineralisation from which originated the world's richest tin deposits. A coulisse between these two begins in Siam, and runs in a direction slightly west of south into Upper Perak whence it extends as a granite mountain range passing near Taiping to the Dindings, and, according to a Dutch geologist, along the east coast of Sumatra, masked by more recent beds, passing through Billiton in an easterly direction, and turning northeast through the centre of Borneo, and up through the Philippines out of our area. Another important fold or coulisse is represented by the Annam cordillera, perhaps continued south into either the Anamba Islands or the Natuna Islands, and thence into Borneo.

The Mesozoic folding was more intense, in the greater part of the area, than that which affected the Tertiary rocks, and this is shown by the fact that the Tertiary rocks often have gentle undulating folds, whereas the Palaeozoic rocks, upon which they unconformably rest, are vertical or highly inclined. However, the Tertiary beds were subjected to intense earth-movements in some districts, as, for example, in Eastern Yunnan, and after folds had been denuded away, great faults cut across the region, at about the end of the Pliocene, probably giving rise to the lakes in which the late Tertiary fresh-water beds were laid down.

In Western Yunnan there were strong folding movements after the Permo-Carboniferous and before the upper Permian period.

Stratigraphical Sequence.

The mountain folds which were described above have been eroded, with the result that there are now exposed strata of all ages, since the period before the dawn of life on the earth. All the countries of our area, south of Burma, formed part of the Palaeozoic continent of Gondwanaland, which remained as a permanent land surface from pre-Cambrian times until Devonian or Carboniferous, and no fossiliferous rocks of pre-Carboniferous age are known, except in the north. Earth-movements and aerial denudation of the later rocks, in Yunnan and the Shan States of Burma, have brought these old rocks to the surface.

Pre-Cambrian.

Many Dutch geologists have expressed the opinion that the "oudeschiefer" (old schist or old slate) formation of the East Indies is, in part, pre-Cambrian, though they admit that where it is not overlain by Carboniferous limestone it may be of Mesozoic age. Some of these geologists have correlated the "oudeschiefer" with the schist series of the Malay Peninsula, the greater part, and perhaps the whole, of which is of Rhaetic age and later, so it appears that there are good grounds for not yet accepting any part of the "oudeschiefer" as pre-Cambrian. In this account we will postpone a description of this "old schist" formation until we are describing the younger Palaeozoic and the Mesozoic formations.

In Yunnan the succession of pre-Cambrian rocks is as shewn below.

* * * * Unconformity * * * *

2. Kao Liang system. Phyllites, quartzites, slates, and an occasional calcareous horizon. In part pre-Cambrian and part Cambrian.

* * * * Unconformity * * * *

1. A basal mass of gneisses and schists underlying all recognised groups.

The basal gneisses and schists are so metamorphosed that it is impossible to determine their original character, except that a small proportion are recognised as metamorphosed sediments. They are intruded by granites which are relatively young, though some of them may be pre-Cambrian.

In the Northern Shan States there is a large development of Archaean gneisses resembling those of South Western Yunnan in that they possess a similar N.E.—S.W. strike. The general mass are of intermediate chemical composition, and they consist of biotite gneisses, which are often remarkably rich in garnets, and which are interfoliated with more acid rocks, including pegmatites and graphic granites. The orthoclase of these last rocks is not infrequently converted into moonstone; often it is more completely altered into epidote, muscovite, and kaolin. In Nyounggouk district these acid rocks contain pink and blue tourmaline (rubellite and indicolite), and it is probably from rocks of this class that the fine gem rubellites are derived.

With the gneisses there occur certain subordinate rocks of basic and sometimes ultra-basic composition, including pyroxene gneisses and pyroxene granulites, and with these rocks, and particularly with the ultra-basic types, certain remarkable crystalline limestones, containing rubies and spinels, are most intimately associated.

A series of mica schists occurs to the south of the ruby mines area, and they seem to pass upwards into the Chaung Magyi series, so being either pre-Cambrian or Cambrian.

The Kao Liang system in Yunnan is certainly in part pre-Cambrian, and partly Cambrian. It occurs as bands, running from north to south, which widen somewhat as they are traced to the south. In the Northern Shan States, south of Yunnan, the pre-Cambrian is represented by the Chaung Magyi system of phyllites and quartzites, and here it differs from that of Yunnan in containing no calcareous bands. La Touche thinks, on lithological grounds, that the Chaung Magyi series may be Cambrian, for it shows only slight signs of alteration, but a careful search of many outcrops revealed no traces of fossils, and as the rocks had been deposited, consolidated, thrown into folds and dislocated, and finally subjected to denudation, before the accumulation upon them of strata containing Ordovician fossils, the stratigraphical evidence points to pre-Cambrian age.

The Bawdwin volcanic rocks, a series of tuffs and ashes interstratified with layers of true rhyolites, occurs in some localities between the Chaung Magyi rocks and the lowest of the fossiliferous series (Ordovician). At Bawdwin the tuffs and ashes have been worked for silver for hundreds of years, and very large quantities of silver-bearing lead ores have been extracted. The mineralisation of the rocks occurred as a result of a great overthrust, in the neighbourhood of which they are intensely crushed and shattered.

Ordovician.

Fossiliferous beds of this age are known in three localities, in Western Yunnan, at Pu-piao, where they consist of sandy shales or mudstones with bands of impure, hard, nodular limestone, at Shih-tien, earthy limestones and slates, and at La-mông, calcareous slates and mudstones. The fossils show a marked resemblance to those of the Northern Shan States of Burma, as is to be expected from the geographical proximity of the areas. In the Northern Shan States the lowest beds of the Ordovician (lower Naungkangyis), on the west side of the Plateau, consist largely of limestones, while to the east of the river Nam-Tu they are represented by a soft sandy marl. The next highest beds (the upper Naungkangyis) are represented, in the west, by intensely crushed shales in which all traces of the original bedding planes have been lost, and east of the Gokteik gorge, (river Nam-Tu), by bright purple clay stones. These strata, after the Plateau Limestone to be described later, are the most important formation occurring in the Shan States.

The Ordovician faunas of Eastern Yunnan and Tongking are of a different type from those of Western Yunnan and the Shan States.

Silurian.

In Western Yunnan fossiliferous slates of Silurian age occur on Shih-tien Hill and a few miles further to the south, and in East Yunnan Silurian shales pass conformably into the lower Devonian. In some parts of Tongking, the Silurian and Devonian are more or less non-fossiliferous owing to metamorphism.

In the Northern Shan States there are thin bands of graptolitic shales containing the only fossils of undoubtedly Llandovery age that have yet been found in the East. They are overlain by sandstones and conglomerates, followed conformably by sandy marls with layers of a very hard and compact limestone. The fauna is similar to that of a corresponding age in Northern and Western Europe, and absolutely distinct from the Himalayan fauna of the same period, as has been the case for all the underlying formations. With the close of the Silurian epoch, the barrier which separated the Burmese and Himalayan life-provinces in Ordovician times was removed, changes in the distribution of land and sea brought a true middle Devonian fauna into Burma, and later a widespread transgression of the Permo-Carboniferous ocean took place over those tracts of Asia lying to the north of Gondwanaland. These changes are heralded by a series of limestones and shales, perhaps passing conformably upwards into the Plateau Limestone of Devonian age, and containing upper Silurian fossils characteristic of the Bohemian or Hercynian type, whereas, as described above, the rock formations before this contained fossils allied to Northern and Western European types.

Devonian.

The shallow-water beds of the upper Silurian period near the northern coast of Gondwanaland, now known in the Northern Shan States, and the deeper-water graptolitic shales of Yunnan further from the shore, were succeeded by a uniform thick deposit of dolomitic limestone, which forms a great area of plateau land, extending from Yunnan into the Southern Shan States, and probably continuous with the limestones in which the guano caves of Moulmein are situated. It extends an unknown distance in an easterly direction, covering a wide area in China. On the west, in the Northern Shan States, it extends to the edge of the Irrawaddy alluvium, but to the north and south of this it is separated from the alluvium by a strip of Archaean rocks. In several places its thickness can be shown to be over 5000 ft. It is remarkably homogeneous, and it is sandy to the touch and granular, although it is very pure, and not at all siliceous in reality. It has a brecciated and intensely crushed appearance, perhaps due to the great earth-movements at the close of the Mesozoic, and perhaps to sinking of the rock into solution-cavities. It is non-fossiliferous, except at one place in the Northern Shan States, called Padaukpin, not more than one hundred square yards in area, where a rich middle Devonian fauna was found, with predominating Western European types, and at one or two places in the south and north of Yunnan, where there is a close resemblance to the Padaukpin type. It is unexpected to find this type of fauna, because, as mentioned above, the life in the north of our area changed in upper Silurian times from the Western European type to that of America and Bohemia. However, the fossils cannot be regarded as necessarily typical of the Plateau limestones, on account of their extremely local occurrence.

In Yunnan and China the Devonian limestones are more bituminous and shaley than in the Shan States and Malay Peninsula. In East Yunnan pure limestones are the exception, and in Indo-China the pre-Carboniferous beds are all sandy, suggesting that the sea of that period was more shallow and less open towards the north and northeast, and the fact that the Carboniferous limestone of Yunnan, Indo China, and China resembles the limestone of the Shan States suggests that, with the close of the Devonian period, the submergence advanced northwards.

Carboniferous and Permian.

In Indo-China and Cochin-China there was an unconformity between the shallow-water Devonian rocks and the succeeding Carboniferous limestones. The lower horizons of the middle Carboniferous limestones of Eastern Yunnan are sandy, and of a shallow-water type, which passes upwards into a sandy coal-bearing series with subordinate limestones, and then, in the western part of East Yunnan, into deep-water limestones. In the eastern area earth-movements took place, resulting in folds running in a northeast-southwest direction, and the denudation of these folds resulted in sandy sediments during the middle Carboniferous period, while the limestones interbedded with basic lavas were laid down during local periods of stability.

Then slow submergence took place, and enormous thicknesses (about 5000 ft.) of massive limestones now cover the area. In the eastern area there is a distinct break in the stratigraphical sequence, between the lower part of the middle Carboniferous and the upper Carboniferous limestones, owing to the folding movements just described, but the conditions during the greater part of the upper Carboniferous period were uniform deep water, resulting in an uninterrupted series of limestones, which are responsible for the unusual scenery of Eastern Yunnan at the present day. In the case of the folded series of middle Carboniferous sands and interbedded limestones the sandy beds have been denuded away easily, leaving the limestone standing out as prominent scarps, but the upper Carboniferous series of limestones, without sandy bands, has given rise to the Karst type of scenery, so called from the Karst district in Austria, dry, and almost waterless, with pot-holes and underground streams.

These Carboniferous limestones are of a very widespread nature, occuring in practically the whole of Indo-China, the Malay Peninsula, Sumatra, and in the islands of Rotti and Timor in the Archipelago, where they pass conformably up into the Permian. Permo-Carboniferous limestones are not very strongly developed in the Northern Shan States, for they have been greatly denuded there, and merely form a band lying on the Plateau Limestone. They differ from the latter in not being so intensely crushed.

In the Malay Peninsula they form very prominent groups of hills, with vertical cliffs up to 2000 ft., separated by intervening expanses of flat land with an irregular surface of pinnacles and solution-hollows, covered and smoothed over with alluvium. The type of scenery here displayed is quite different from the karstic type of Yunnan and the Shan States, although the limestone in the Peninsula too is very uniformly free from sandy bands. The difference is due to the fact that, in the Peninsula, the limestone has been converted into coarsely crystalline marble, by pressure and heat consequent on the intrusion of the Main Range granite in Mesozoic times, and, except for occasional fissures, the limestone mass is impervious to water. Caves, characteristic also of the Permo-Carboniferous limestone (and not of the Plateau Limestone) of Yunnan and the Shan States, are common in the Peninsula, and here they frequently contain phosphate deposits derived either from bats' guano, or from a concentration of the phosphatic minerals originally contained in the limestone now dissolved to form the caves. Guano deposits are known also in the limestone caves of Moulmein in Lower Burma. The wide depressions in the plateau country of the Shan States, due to subsidence after solution of the underlying limestone, and to the crushed limestone being unable to sustain its own weight, are not met with in the Malay Peninsula, but there was one well-known case of a village sinking several feet owing to the water being pumped from an underground cave.

The series has been subjected to intense folding, although this is not evident from an examination of the numerous cliff-exposures, except in certain occasional instances, for, in nearly all cases, the structure has been completely obliterated by the deposition of surface stalactitic deposits. One exception is Gunong Ginting, near Ipoh, where several distinct overfolds are seen, only a few hundred yards apart, with the axes of folding dipping in quite different directions, and numerous readings taken in limestone pinnacles, where the cover of alluvium has been removed in mining operations, also give very different dips. These folds were accompanied by faults, as would be expected in such a massive rock, and, in addition, a series of vertical faults was formed when the Main Range granite was intruded, independent of the folding, but due to the unequal subsidence or raising of different blocks of limestone and overlying Triassic and Jurassic rocks in the molten magma. Some of these vertical faults must have been of great magnitude, for schists, almost certainly of Triassic or Jurassic age, are found faulted down against the foot of a cliff, hundreds of feet high, of Permo-Carboniferous limestone.

The above description applies particularly to the limestone of the western States of the Malay Peninsula; the calcareous series of Raub rocks east of the Main Range is similar, except that here a shaley facies is strongly developed. It is probable that the absence of shales in the west is due in part to the intense metamorphism which the series has undergone, and that certain black streaks and bands which penetrate the limestone represent their remains. There is no evidence to show that the limestone hills in the east have been formed by faulting.

The fossils of the Shan States are similar types to those of the Salt Range of India, and they resemble a few fossils from the islands of Rotti and Timor in the Malay Archipelago. The fossils of the Malay Peninsula are found only in a few localities, as, in most places, all traces of organism have been destroyed by the recrystallisation of the limestone, and specimens of homotaxial value have been found only in Pahang, east of the Main Range, and in Patalung, Siam. The Pahang fossils yield types ranging from lower Carboniferous to Permian, whereas the Siamese fossils have been described by one author as lower Carboniferous and by another as Permo-Carboniferous. South of a line drawn east and west through Kajang in South Selangor, the limestones and shales seem to pass into an unfossiliferous shaley series, devoid of sandy beds, and non-calcareous, except for calcareous shales and shaley limestones occurring in the Muar Valley.

In Sumatra Carboniferous limestones occur, forming mountains nearly 2000 feet high, crystalline and containing black nodular chert. There are also other Palaeozoic limestones with very scanty fossils whose age has not yet been determined. Probably they too are Carboniferous to Permian.

In the Malay Peninsula and Archipelago the Carboniferous and Permo-Carboniferous limestones just described are the oldest rocks known, with the following exceptions, (i) a granite in Ambovna is said to be Palaeozoic, and the granite fragments in volcanic ash near Singapore may be of the same age, (ii) a series of shales and fine-grained quartzites underlying limestone in the Langkawi Islands, perhaps corresponding with the Mergui series of shales and arenaceous rocks in Burma, underlying the Moulmein Limestone. The *Oudeschiefer* formation of the Archipelago is believed to be of Permian to Jurassic age, in spite of the fact that many geologists in the past have considered it to be Palaeozoic or even pre-Cambrian.

Folding movements, which took place towards the close of the period of formation of this very widespread series of limestones, were heralded and accompanied by a big show of volcanic activity, not, however, displayed in all parts of the area. It is evident in Western Yunnan, where the greater part of the Permo-Carboniferous series is often made up of tuff and ash beds, intercalated with thick andesitic, doleritic, and basaltic lava flows; in Eastern Yunnan, where basic lavas are found interbedded with the upper part of the middle Carboniferous limestone; in the Malay Peninsula, particularly in Pahang, east of the Main Range, where it is represented by acid, intermediate, and occasionally basic, lavas, dykes, and tuffs; near Singapore; in South Sumatra, where a series similar to that in the Malay Peninsula occurs; and in Borneo.

In Pahang, volcanic activity began probably in the Carboniferous period and continued intermittently through the greater part of the Triassic, although, as land conditions followed the deposition of the limestone, a good deal of the series has been denuded away. Evidence of the persistence of volcanic activity, during the shallow-water and land conditions, is furnished by a remarkable deposit of boulders of volcanic rocks, dyke rocks lavas and tuffs, embedded in volcanic tuff. It is supposed to be a beach deposit formed of boulders of volcanic rocks which were exposed along the shore line, and cemented by volcanic ashes which were all the time being ejected by neighbouring volcanoes. Tuffs and lavas are interbedded with the succeeding shallow-water series of quartzites, shales, and schists, of Triassic age, both in Pahang, and, on the western flanks of the Main Range, in South Selangor.

In Central Borneo volcanic rocks of an andesitic type are interbedded with rocks which are probably of Jurassic age, and certain amphibolites there are variously held to be pre-Cambrian crystalline slates, or eruptive rocks, belonging to this Jurassic period, which have been uralitised and altered by mountain-pressure.

Permo-Carboniferous and Mesozoic volcanic rocks, including serpentine and andesite, with corresponding tuffs and breccias, and occasionally dolerites, are very widespread throughout the smaller islands of the Archipelago, though only in a few of the places, such as at Letti, where volcanic breccias are overlain by fossiliferous Permian limestone, is it possible to be sure whether they are pre-Permian or Mesozoic. In Java there are volcanic rocks known to be pre-Eocene, but nothing more definite can be stated as to their age.

Triassic and Rhaetic.

Towards the middle of the Permian period the emergence of the land from the sea began in Eastern Yunnan, and the Permo-Carboniferous limestone masses were attacked by denudation, so much so, that, in some places, they were completely removed. The shore line retreated back far to the south and west. The thick Red Beds of upper Permian and perhaps lower Triassic age, were then deposited in Yunnan, the lower part of the series in East Yunnan consisting of conglomerates, and passing up into sandstones and shales, often containing salt and gypsum. Widespread basaltic and andesitic eruptions occurred at the close of the Permian. Triassic beds are preserved in East Yunnan only where they were faulted down, and so preserved from the severe erosion to which the country was subjected at the close of the Pliocene period. The beds are alternations of marine and land deposits, passing into deep-sea deposits at the top. After the deposition of the Red beds, no more marine sediments were formed, and Yunnan has been a land surface from the upper Triassic period to the present day.

The Shan States were dry land during the greater part of the Permian and the whole of the Triassic period, and no deposition took place, except for beach deposits derived from the denudation of the Plateau limestone and the underlying rocks. In the Malay Peninsula there was probably a land-period after the formation of the Permo-Carboniferous limestone, followed by shallow-water conditions, during which the sea was dotted with lagoons, probably formed by coral-reefs, enclosing clear water suitable for the growth of radiolaria, the silica necessary for their growth being supplied by submarine volcanic emanations. Periodical slight changes in the sea level took place, which admitted detrital matter from the neighbouring land. These conditions produced the series of radiolarian cherts, interbedded with quartzites, sandstones, and grits, which cover a large area in Kedah, South Selangor, Negri Sembilan, and Pahang, in the Malay Peninsula, and in the island of Billiton. Radiolarian rocks probably of this period are common also in Borneo, Sumatra, Celebes, Timor, Rotti, and many other islands. In the Malay Peninsula the series, in some places, is built up of deposits of chert perhaps hundreds of feet in thickness, and thicker deposits of sandy beds, while in other places the series consists of alternating bands of chert and grit or quartzite, varying from several feet to only one inch in thickness. All the beds are contorted into sharp folds, and the rocks, particularly the shales and shaley grits, have been metamorphosed by earth-movements. In Perak this series occurs only in the extreme north, where it is a continuation of the extensive development in Kedah. Further south it probably corresponds roughly with a series of shallow-water quartzites and shales, which covers the greater part of the area for thirty miles north of Taiping, and which disappears, west of the Semanggol range, under Recent alluvium. The Triassic fossil *Estheriella* was found in these shales at Semanggol.

Certain boulder clays in the Kinta Valley, which are older than the Mesozoic granite, have been provisionally allotted to the Permo-Triassic period. They are very interesting because they are the source of the greatest part of the tin deposits of the Kinta Valley. For a long time they were spoken of as alluvial deposits, until geological investigation showed that they are undoubtedly older than the granite. It is possible that they have suffered considerable alteration since the granite was intruded, and one geologist holds that they were derived from quartzites and shales which had been mineralised by the Mesozoic granite. He says that the underlying rock, known in many cases to be limestone, has been partially dissolved by underground water, and that the quartzites and shales were let down into the resulting cavity, with a consequent destruction of the bedding. The result is a clay containing a large proportion of quartz sand with varying amounts of tin-ore. That the clays are older than the granite is seen by the following facts.

(1) Near the granite the clays are often rich in tourmaline streaks and patches, and in quartz, whereas further from the junction the tourmaline and quartz are less evident.

(2) The clays near the granite are often richer in tin than those further away.

The tourmaline patches and quartz are derived from veins of quartz and tourmaline which traversed the clays before they became jumbled up by the solution of the underlying limestone.

The chert series of South Selangor, Negri Sembilan and Pahang is overlain by grits, quartzites, and shales, the lower portion of which includes beds of conglomerate, in which the pebbles consist in the main of quartz, quartzite, radiolarian chert, and rocks of the Pahang Volcanic series. It is probable that this quartzite and shale series is separated by a considerable unconformity from the underlying cherts and quartzites, and that strong folding movements, which affected the latter, had ceased when the shallow-water conditions of the Rhaetic and Jurassic periods had set in.

In Yunnan and parts of Indo-China there were land conditions from the upper Triassic to the present day, but the Shan sea basin, described below, extended into Yunnan, so some Rhaetic beds were formed resembling the Napeng beds of the Shan States. The Napeng beds are fossiliferous clays, sometimes calcareous, laid down on the irregular surface of the Plateau Limestone. The fossils they contain are sometimes ill-developed, owing to the fact that they lived in cups in the limestone not in free communication with the open sea, while in other places the fossils are well grown. The number of new species shows that great changes in the distribution of sea and land had taken place between the deposition of the Permo-Carboniferous and the Napeng beds, and the basin of the Shan sea was isolated from the main ocean. It extended into Yunnan, as mentioned above, and into the Malay Peninsula, where characteristic Rhaetic fossils have been found in three or four places east of the Main Range, possibly also in Singapore Island, and certainly on the west coast of Sumatra. In French Indo-China the Rhaetic period was represented by shallow-water beds also, including the coal beds of Tien Yen Lang Then.

Jurassic.

As already mentioned, there is an extensive series of shallow-water and estuarine shales and quartzites, of Jurassic age, in the Malay Peninsula. The shales have usually been converted into phyllites by the earth-movements which took place at the time of the intrusion of the Mesozoic granite masses, and they show sharp folds and faults. The shales are locally carbonaceous, and certain intrusions are known, consisting of about forty or fifty per cent carbon and the remainder siliceous material, which probably represent coal seams which were altered by the granite.

In Burma, the Mergui series of slates, argillites, clay-schists, and silicified tuffs, with subordinate quartzites and conglomerates, have been regarded as corresponding with the shallow-water Jurassic series of quartzites and shales further south in the Peninsula. However, as the Officiating Director of the Geological Survey of India in his General Report for 1920 (page 26), describes the series as underlying the Moulmein Limestone formation, it now appears that the rocks are of Carboniferous or pre-Carboniferous age, and that they correspond with the similar series underlying the Carboniferous or Permo-Carboniferous limestone of the Langkawi Islands.

In the Dutch East Indies the pre-Cretaceous beds younger than the Permo-Carboniferous limestone are thought to be represented by the "old schist formation," already mentioned in the description of the pre-Cambrian rocks. As stated in that description, many authors have relegated it, largely on the ground of the lack of fossils, to the pre-Cambrian, and others to the Palaeozoic period, but it bears a strong resemblance to the altered shales and quartzites of the Malay Peninsula, and it was probably deposited at the same time. If this is so, the radiolarian chert beds and the Rhaetic of the Archipelago are part of the "old schist formation," or the "Malayan Series" as it was called by Volz.

In Sarawak a limestone containing middle Oolite fossils is known.

In the Northern Shan States of Burma, the Napeng beds of Rhaetic age pass conformably into the succeeding Namyau series, which consists of basal conglomerates, overlain by sandstones, shales, and clays, with very subordinate carbonaceous layers. In the greater part of the north of our area, continental conditions were prevailing (as in the Rhaetic period), and the old land surface to the northeast was gradually rising, with a consequent advance southwards of the shore line, so that the sandy sediment from it was deposited as the Namyau series. This series of beds once covered a wide area, but denudation has entirely removed it from the western portion of the Shan Plateau, and the portions still remaining only owe their preservation to the fact that they were faulted down, and so protected from the severe erosion in post-Jurassic times. The rocks are thrown into regular folds striking from N.N.E. to S.S.W.

Cretaceous.

It was probably during the Cretaceous period that the granite which runs from the Southern Shan States, through Tavoy and Mergui to the Malay States, to Singapore, and the islands of Banka and Billiton, was intruded, bringing with it tin and tungsten minerals. Dutch authors think that the granites and hornblende-granites of the Archipelago were intruded at different periods, and the granite of Amboyna is held to be older than the Permian. It may be of the same age as the granite from which the fragments in the Pahang Volcanic series ash of Singapore were derived.

Granitic rocks in Eastern Yunnan contain cassiterite, and the tin deposits of Ko-chin have been derived from them. Two French geologists agree in assigning to them a Palaeozoic age, and, if they are right, this is very interesting, as showing that the tin deposits of the area which we are considering were not all brought by granite of one period. Many of the coulisses, mentioned in the earlier part of this account, came into being as a result of the intrusion of the Mesozoic granite.

In Sumatra the granite is mostly syenitic, and whether it was intruded in Palaeozoic or Mesozoic times is not yet known. In the Malay Peninsula there are two distinct facies, a tin-bearing granite, and a hornblende-granite with associated syenite, the latter being found in the Benom Range. This hornblende-granite agrees with the hornblende-granites found in Sumatra, and elsewhere in the Archipelago, and there is no evidence of it being younger or older than the tin-bearing granite.

Sedimentary strata of Cretaceous age are known in Borneo, Java, Sumatra, and smaller islands of the Dutch East Indies, but all of the northern part of the area was a land surface subject to erosion, and no deposition was taking place there.

In Borneo certain strongly folded shallow-water sandstones and marls contain foraminifera, of which one species *Orbitolina,* makes it certain that the deposits are Cretaceous (Cenomanian). In Java there is a series of serpentinous, mica-, chloritic, and clay-schists containing limestone bands, which, in one place, contained *Orbitolina,* the fossil characteristic of the Cretaceous beds in Borneo. These limestones are nearly always granular and crystalline, without fossils. The schists are traversed by thin quartz-veins, and they are penetrated also by dykes of quartz-porphyry, gabbro and dolerite.

Cretaceous rocks are found in the Arakan Yoma of Burma, and along the same line of strike, to the south, in the Andaman Islands. Marine limetones occur at the base, while the upper part of the series consists of shallow-water and estuarine deposits. Besides the granite intrusion, masses of serpentines of Cretaceous age are known, and these are penetrated by veins of the semi-precious mineral jadeite.

Tertiary.

In our area, as in Europe, there is a blank between the upper Cretaceous and the overlying Eocene deposits, which is marked by an abrupt change in the nature of the fauna, rather than by a sharply marked stratigraphical break. The igneous activity in Cretaceous times was the forerunner of earth-movements which continued during Tertiary times, affecting both the lower and upper Tertiary, although they were much stronger in the north, and in the Andaman Islands, than in the Malay Peninsula and in the East Indies.

In the Northern Shan States there is no trace of the marine Tertiary rocks which are so well developed in the plains of Lower and Upper Burma, so it is clear that, when the Tertiary sea extended over what is now the valley of the Irrawaddy, the Shan Plateau had already been raised above its waters.

Tertiary of Burma.

In Burma the Tertiary beds are represented by the following series:

Upper Tertiary	Irrawaddy system of fresh-water beds.
Middle Tertiary (lower Miocene and Oligocene)	Pegu system of marine beds.

* * * * Unconformity * * * *

Lower Tertiary (Eocene)	consisting of nummulitic limestones underlain by a shaley series containing interbedded seams of coal.

* * * * Unconformity * * * *

Cretaceous beds passing down into the Triassic.

The Tertiary coals of Burma are nearly all confined to the lower Tertiary or Eocene, being almost invariably associated with characteristic beds of nummulitic limestone. The series is about 1200 feet in thickness. Usually the coals are bright and non-laminated and they contain a large proportion of volatile matter. They are extremely friable and quickly break up under exposure. They do not cake, and they contain only a small proportion of ash.

In Tennasserim there are several localities where the coal has been reported on, and, in some cases, the seams have been shown to be of no practical value, because the seams are too small, or because of the poor quality of the coal. In Henzada district an attempt was made to exploit the coal, but the rocks are highly disturbed, (the general dip is about 60°), and transport and labour difficulties prevented operations. At Thayetmyo a mine was opened many years ago, in spite of the fact that the beds were nearly vertical, so making mining very difficult, but the two original seams gradually merged into one, and then died out, after only a little coal had been taken out, so operations were abandoned.

In Arakan district similar coal seams are found, which, on account of their highly disturbed nature, are not likely to provide large supplies, even for local use. In Shwebo district a company opened up extensive mines at Letkobin which worked for thirteen years with an annual output of 10,000 to 15,000 tons until the year 1904, when the workable coal became exhausted.

Near the Upper Chindwin River, coal seams are quite strongly developed, and, in the Nantahin-Peluswa area, of twenty five square miles, it is calculated that there are 210 million tons of workable coal. Near Pinlebu, a village twenty five miles north-west of Wuntho, there are promising coal seams of Miocene age, dipping at a low angle.

The Pegu system attains a thickness of 12,000 feet. It is important as containing the petroliferous beds which yield all the petroleum of Burma. It is marine throughout.

Pegu system	Kama clays	Fossiliferous blue clays and sandy beds. The main oil-bearing formation of Burma.
	Upper Prome series Lower Prome series	Fossiliferous sandstones, clays, and shales.
	Sitsayan shales	Unfossiliferous shales, resting unconformably on Eocene nummulitic limestone.

The outcrop of Kama clays extends along the Irrawaddy Basin, and on it are situated the oil fields of Yenangyaung, Singu, Yenangyat, Minbu, and various smaller fields. The Petroleum, being lighter than water, has been imprisoned along the axes of the anticlines, wherever a layer of impermeable rock has formed a roof to prevent it from escaping, and bores are put down along the crests of the folds to tap it. Gases have also collected, and the mud volcanoes of the Arakan coast and at Minbu owe their origin to the escape of such gases along fissures.

The Kama clays are overlain by the Irrawaddy system of fluviatile deposits, attaining a thickness of 20,000 feet, which were once known as the "fossil-wood group" owing to the abundance of drift-wood contained in them. Emergence of the land took place in the north of our area sooner than in the south, and the retreat of the shore line from north to south began at the end of the Pegu period. In the north the Irrawaddy rocks are all fresh-water beds, whereas in the south, as in western Prome, the lower part of the Irrawaddy system includes some marine beds. Detailed work by oil geologists shows that in some districts there is considerable unconformity between the two series.

In the plain of Irrawaddy beds, east of the Irrawaddy River and in the southwest of Yunnan, strong volcanic activity took place, building up the great volcanoes of Popa and Hawshuenshan. As already mentioned, these eruptions are many miles to the west of the boundary-fault between the Tertiary rocks of the Irrawaddy Plain and the older rocks of the Shan Plateau. Popa is fifty miles northeast of the Yenangyaung oil field.

The basalt dyke at Loi Ling, in the Northern Shan States, is a Tertiary volcano, but here there was a much smaller display than in the Irrawaddy Plain and in Southwest Yunnan.

The fresh-water Tertiary beds of the Northern Shan States are silts and soft sandy rocks with seams of brown lignitic coal, filling lake basins. These basins in the older rocks are the result of faults which occurred towards the close of the Tertiary period, and the lacustrine beds in them are either of late Tertiary or Pleistocene age. They have been found in six places, the most important being at Nanma, where the area is fifteen miles long and three and a half miles wide. The coal seams are confined to the lower portion of the series. The dip averages 20°, but it varies considerably locally, perhaps due to underground solution of the limestone floor. The inferiority of the coal, and the distance of the field from the railway, make it doubtful if it is worth while to start mining operations.

Similar lacustrine deposits occur in different parts of Indo China.

Tertiary of Malay Peninsula.

In the Malay Peninsula Tertiary beds with interbedded coal seams are known in three localities, at Rantau Panjang (in Selangor), at Enggor (in Perak), and in Perlis.

At Rantau Panjang, the coal seams are being profitably worked, the fuel finding a ready sale, for use in the tin mines and railways of the Peninsula. The thickness of the beds is not known with certainty. It appears that coal seams, interbedded with sands and and shales, form the lower portion of the series, and that they are overlain by several hundred feet of shales which contain a little oil, not enough to pay for distillation. According to the usual procedure, this coal should be classed as a lignite. Its percentage of fixed carbon is less, and its percentage of moisture is higher, than that of some cheap Indian coals, and these are unfavourable properties, but its low percentage of ash, and the fact that it does not clinker, are properties in its favour.

The percentage of moisture in the Rantau Panjang coal (about 20 %) indicates an upper Miocene age. The dips in these Miocene beds range from 10° to 12°.

When this occurrence was the only Tertiary deposit that had been prospected in the Peninsula, it was thought to be a lake or swamp deposit, similar to those in the Northern Shan States, although it was then also held to be probable that its present small area, (which amounts to only a few square miles), does not represent the whole of the original area of deposition, but that much of it has been removed by denudation. However, the discovery of over 90 feet of calcareous shale, at Enggor, lying under Tertiary sands, shales, (some of which are themselves calcareous), and interbedded coal seams, suggests that the Enggor deposits, at any rate, are probably not lacustrine deposits, but marine, and that the deposits might have been comparable in extent with those of Sumatra and Burma if the Peninsula had not been subjected to severe erosion in post-Miocene times.

In Perlis the area and thickness of the coal bearing beds is unproved. A bore was made to a depth of 205 feet and was then stopped in June 1921, owing to lack of casing. Sands, clays and sandy clays were first encountered, followed by running sands with traces of coal from 125 feet to 205 feet below the surface. The coal at Enggor and at Perlis is similar in composition to that at Rantau Panjang, and is probably of the same age.

There are still considerable areas in the Peninsula, east of the Main Range, as yet unexplored, and it is possible that in these areas there may be extensive tracts of country covered with marine and fresh-water beds, equivalent to those of the Irrawaddy plains. Such tracts provide the only possibility of mineral oil being found in payable quantities in the Malay Peninsula. Unfortunately there is no evidence that any such beds exist.

Tertiary of Sumatra.

In Sumatra there is a considerable area of Tertiary beds, both near the coast and in subsided areas inland. Near the east coast they are concealed by Pleistocene deposits. There is very little fossil evidence to go by, but the percentage of water in the interbedded brown coals gives information as to the age of the beds. The Ombilin coal field near Padang, which has been worked by the Government for many years, is of Eocene age, judging by the low percentage of moisture, and more Eocene coals occur at Gunong Tusam in North Sumatra. The younger Tertiaries in North Sumatra usually contain no coal at all, but the commonest coal occurrences in the south are in the upper Miocene beds (younger Tertiary), as at Palembang. In the Boekit Asam Field, where the estimated amount of workable coal is forty million tons, the seams are 6 to 7, 3 to 6, and 5 to 6 metres thick. This upper Miocene series with coal seams is recognised also in Djambi though the seams are diminishing in number and thickness, so it appears that the Djambi Province forms a transition from Palembang to Deli and Atjeh in the north. .

No unconformity has been found in the coastal regions affecting the later Tertiaries, except that between Tertiary and very young Pleistocene strata. In the Andaman Islands, on the other hand, the Eocene is highly folded, and the Miocene, unconformable on the Eocene, is only slightly folded, showing that the main younger folding was pre-Miocene. A similar unconformity exists between the Eocene and Miocene inland in Sumatra. No information about this system of folding can be obtained from the small exposures of Tertiary (Miocene) rocks in the Malay Peninsula, except that the small dips indicate that no intense folding has occurred after Miocene times. In the Mesozoic granite there are sheared areas which are probably the result of Tertiary movements.

In the Tertiary-Quaternary period in Sumatra, there was considerable volcanic activity, generally of an andesitic type, accompanied by subordinate intrusions of quartz-porphyry, porphyrite, gabbro, picrite, basalt and diorite. The upper Miocene lignite beds of Palembang have been subjected to the heat developed by the intrusion of such rocks, and their economic value has thereby been increased.

Tertiary of Java.

The greater part of Java is covered with Tertiary, Quaternary, and Recent deposits, and all the divisions of the Tertiary seem to be represented in some part, or other, of the island. The Eocene beds include compact clays, marls, and the widespread nummulitic limestones common to this period all over the world. In west Java, at Bantam, dolerites and diorites are intercalated with them and at Nanggoulan, besides basalts and olivine dolerites, lignite beds are found interbedded with the sediments.

The lower Miocene are often very much folded, and may be even vertical. Some of the beds were laid down under water, and the andesitic lava flows of this period were sometimes laid down under the sea, and sometimes on dry land.

The middle Miocene beds are less strongly developed than the lower, and they are typically marly rocks. Pyroxene-andesites are interbedded with the series in Bantam and in Preanger, but not in east or central Java. The upper Miocene beds are essentially calcareous, sometimes consisting of hard, crystalline limestone, and sometimes being soft and marly. They are markedly dolomitic. No volcanic rocks are found in this part of the Miocene series. The middle and upper Miocene beds are often folded, but usually less strongly so than the lower Miocene.

There have been reports of rich gold deposits being present in Java, but there is no foundation for them. A little gold is present in the pyrites of certain Miocene clays which have been altered by andesitic flows in the Residency of Krawang, but the commercial value of the deposit is negligible.

Eocene deposits in Bantam contain a good coal, but they are so folded, and the position of the one metre seam is made so irregular by these foldings, that it would not pay to work. There are about two million tons of fuel available here. Lignites of upper Tertiary age are known in Nanggoulan and in Bantam. Oil is obtained from Miocene beds in many localities, perhaps formed from the foraminiferal remains which they contain.

Tertiary of Borneo.

In Borneo, in the west, no Tertiary strata are found, this period being represented only by andesitic lava flows, whereas, in the southern, northern, and central parts of the island, Tertiary deposits are well developed. In Central Borneo boulders of Eocene age containing nummulites are contained in valley gravels, but these nummulitic Eocene beds are not met with *in situ*. A sandstone formation of estuarine origin, with interbedded coal seams in Central Borneo, is placed in the older Tertiary series. Generally the strata are horizontal, or only slightly tilted, but locally they are tilted and strongly disturbed and sometimes even vertical. Two seams of coal, two metres thick are being worked in Eocene beds on the island of Poeloe Laoet, off the southeast coast of Borneo. The field is estimated to contain eighty million tons of workable coal.

Recent Deposits.

They include many deposits of great economic value, such as the ruby gravels of the Mogok Valley, and the alluvial tin-deposits of Burma, the Malay Peninsula, and the islands of Banka and Billiton. Where they are devoid of minerals they usually provide very good agricultural land, and the clay beds which they contain are used for brick-making. In Borneo the old gravelly river-depists generally contain gold, especially in west Borneo, but, although they are worked by the Chinese in certain rich spots, it has not yet been proved that they are worth working on a large scale. In the Malay Peninsula it is fairly certain that the amount of gold in similar deposits does not pay to work by European methods.

In the Malay Peninsula and in Sumatra there is evidence that the sea had a level, in recent times, higher than it has at present. In Sumatra it is indicated by raised sea-beaches, some more than 300 feet above sea-level, and also by high gravel terraces in river-basins close to the present sea shore. On the Peninsula, in Perlis, marine shells were found in a cave nearly 300 feet above sea-level, but they may have been carried there by human agency. However, biological and geological evidence combined indicate that the Peninsula was in Recent times connected to the Archipelago, so that Sumatra, Java, Borneo, and the Peninsula were united to form a continent. The sea level then rose until the Peninsula was a group of islands, and subsequent recession of the sea took place later which is believed to be still in progress at the present day. Molengraaf does not agree that Borneo has been affected by this cycle.

Under the heading of Recent deposits should be classed the deposits now being laid down by the active volcanoes in Sumatra, Java, and various islands. Barren Island, east of the Andamans, was last observed to be in eruption in 1789, and since then it has been dormant. In Borneo the Muller Mountains are built up of rhyolitic rocks, perhaps of Tertiary or of sub-Recent times, though it is also possible that they may be so old as the Cretaceous period.

It is interesting to observe that there is a close connection between the position of volcanoes, both active and recently extinct, and the lines of folding.

The Early History

OF

Singapore, Johore & Malacca;

AN OUTLINE OF A PAPER BY G. P. ROUFFAER.

BY R. O. WINSTEDT, D. LITT. (OXON.)

In the *Bijdragen tot de Taal- Land- en Volkenkunde van Nederlandsch-Indie* (Deel 77), 1921, G. P. Rouffaer, who first identified *tanah Mĕlayu* as the basin of the Jambi, has published a startling paper on the geography of the Malaya Peninsula. It is probable that his surmises as to the situation of Langkasuka and several other theories will not be accepted, but his paper should be in the hands of every serious student of Peninsular history.

Rouffaer brushes aside G. Ferrand's recent theory (*Journal Asiatique,* 1918) that Malacca existed, as the unreliable Gaspar Correa wrote, for 700 years before the coming of the Portuguese, under the name *Malayu,* Marco Polo's *Malayur. Malayur* is only a Tamil form of *Malayu,* the original home of the Malays in Jambi. Would Fra Odorigo van Pordenone and Ibn Batutah have been silent over the existence of such an early Malacca? Would the *Nagarakretagama* (1365 A.D.), recording the conquests of Hayam Wuruk, the famous ruler of Majapahit, have then referred to the Peninsula simply as Pahang?

On the other hand it is hardly likely that in 1403 Malacca "belonged to Siam," as the Ming annals say; from 1405-1413 was a Hindu state under Permaisura and becoming Muslim under Gujerati influence in 1414 suddenly won trade and empire. The *Pararaton* mentions two Malay princesses captured at the fall of Jambi and one Tuhan Wuruju (= Bongsu), a *dewa-putĕra* (*i.e.* son of a Ksatriya *dewa*) of *Pamelekahan* or "Malacca lands," a captive in Majapahit in 1328 A.D. Again Gerini tells how Siamese laws enacted in 1360 A.D. cite as tributary to Siam "Ujong Tanah, *Malaka,* Malayu, Worawari" (Researches, 1909, pp. 531-2). Probably Barros (1553 A.D.) and the *Sĕjarah Mĕlayu* are right in saying that Malacca existed as early as the middle of the XIIIth century A.D. and became a commercial centre about 1400 A.D. owing to immigration of Malays from Singapore or Tumasik, the "sea-country."

Barros (1553), the most reliable of Portuguese chroniclers, relates how one Sangesinga (? Sangyang Singha) ruler of Singapore was murdered by his guest Permaisura, who was a fugitive from *East Java* owing to disturbances on the death of Pararisa (= O. J. Bhra Wicesa, who ascended the throne of Majapahit in

1389 A.D. and ruled some 40 years). The king of Siam attacked the usurper who fled to Pago on the Muar. His whilom followers, the Cellates (= *Orang Laut*) opened Bertam near Malacca.

D'Albuquerque (1557) relates how, when Malacca was founded, a Bhatara ruled *Tumapel* in Java and the Permaisura fled to *Singapore,* murdered its chief and ruled it for five years, until the ruler of Patani, brother of the murdered chief, drove him to Muar, whence he went to Bintao (Bertam) and founded Malacca. The reference to Tumapel is valuable.

The *Sĕjarah Mĕlayu* (Chapters 5 and 10) give the Malay tradition of Singapore's relationship with Java. The end of chapter 10 refers to its destruction by Hayam Wuruk *after* 1338 A.D. when according to the *Pararaton* Gajadmada took his famous oath not to eat *palapa* until 10 countries including Palembang Pahang and Tumasik had been subjected to Majapahit and *before* 1365 A.D. when the *Nagarakretagama* tells how all the islands and states in the east and west of the Malay Archipelago had been subdued. The lettering on the fragment of the Singapore monolith, now in Raffles' Museum, is said by Dr. Krom to resemble Majapahit characters and to antedate somewhat 1360 A.D. Dr. Krom is studying a cast of the fragment.

How old is Singapore? I'Tsing mentions in 690 A.D. a state "Mo-ho-hsin" at the south of the Peninsula = *Mahasin* "the great Salt state," which Rouffaer identifies with a Malay land "Hasin" recorded in a Majapahit inscription of 1034 A.D. to have been conquered by Erlangga, a prince in East Java (born 991 A.D.—reigned 1019-1042 A.D.). Probably it is Ibn Khordadybeh's "Schalahit" (*Sĕlat*). According to Rouffaer it was Tasik = Temasik (of the 14th century) = old Samudra = Singapura (of the 15th cent.), while on the mainland was Wura-wari (old Jav. = "clear water") from the 10th to 11th centuries = Ganggayu *i.e.* Gangga ayu (O. J. = "fresh water") before 1450 but still known at the time of the *Sĕjarah Mĕlayu* (1612 A.D.) = Johor of the XVIth century. An inscription of 1006 A.D. in Sanskrit and old Javanese, in the Calcutta Museum, tells how Wurawari had brought disaster to Java, and the Siamese laws of 1360 A.D. count it among places subject to Siam. In the Tanjore inscription of Rajendracola I (1030 A.D.), Kadaram = Kedah, Srivijayam = Palembang, Malayur = Jambi, and Rouffaer suggests Mayirudingam = Great Yirudingam = Chao Ju Kua's Great Ji-lo-t'ing = Mahasin = Singapore; Ilangacogam = Langkasuka = Ganggayu = Wurawari; Ma-Ppappalam = ? Pahang or Penang, and Mevilimbangam "the walled" may be the Dindings or Klang. Langkasuka = Chao Ju Kua's Ling-ya-ssi-kia (1225 A.D.) = the Negarakretagama's Langkasuka (1365) = I-Tsing's Lang-ka-su (692) = Langgasu or Langga of the Chinese annals of the Liang dynasty (502-556) = ? the Lanka of the *Ramayana.* The Calcutta inscription speaks of Luaram (= *lwah* O. J. "river, water" and *ram* Skt. = *rama* "sweet, charming") as its capital.

An inscription of 924 A.D. of prince Sri Wijayaloka of East Java speaks of Ujong Galoh = Ujong Putri = Jong Galoh or the Hujung Galoh of Erlangga's inscription. *Galoh* 'jewel' = *jauhar* (Arabic) = Johore, and the name fits the honorific Ratna-parayana of the old Javanese *Ramayana* and the "Golden Chersonese" of Ptolemy, whose Sabana will correspond with the XVIth century Straits of Sabang and be the Karimuns, Hasin or Galoh. Was it from the Biduanda Kallang of Kallang river that the mysterious Kalangs, prisoners of war mentioned in old Javanese romance, came? Among the Solo regalia (*upachara*) are a Snake (*Ardawalike*) and a Roc (*Garuda*); among the Jokja regalia only the Snake. These must be symbols of the victory of Erlangga's as Vishnus's Garuda over the 'Snake' princes of Wurawari, Hasin, Langka, just as of the other regalia an Elephant symbolizes Patih Gajahmada, a Cock Hayam Wuruk and a Buffalo-Calf Java's victory over Menangke(r)bau and so on. To this day a Garuda is the symbol of Hindu Bali (first conquered by Java in Erlangga's time), while the Muslim mosques and art of Java took a Snake as the symbol of Islam's victory over Hinduism.

Apparently about 1135 A.D. Daha brought Galoh nearly to ruin. A Panji tale (Bij. Kon. Inst. 2, VII, 1863) speaks of a Klana Tunjong-Seta, prince of the island Kenchana, (= "gold" and ? the "Golden Chersonese"), who desiring to win a Daha princess, Dewi Angreni, (or Raden Galoh), attacked Java and failed, slain by Pangeran Klana Jayang Sari, *alias* Raden Panji Kuda Wanengpati, a prince of Jenggala in the service of the ruler of Kediri. The people of Kenchana and three princes were carried captive to Java. Perhaps the *Sĕjarah Mĕlayu* (chapters 14 and 19) show that Middle Java and Ujong Tanah once came to grips and that Malacca, or really Galoh, had to do with Daha in the Panji period.

Though the early Portuguese knew nothing of Galoh, Ganggayu or Langka, the *Sĕjarah Mĕlayu* (chapter 1) connects Ganggayu with Johore and interprets the word to mean "a treasure-house of jewels," which fits both *galoh* and *jauhar*.

Between 1275 when Kertanagara of Tumapel sent his ill-fated expedition against Palembang and Marco Polo's visit in 1292, apparently Kertanagara had destroyed Mahasin *i.e.* old Singapore (*Sĕjarah Mĕlayu.* chapter 5). But Marco Polo mentions "Pentam" or Bintan, whither perhaps one band of fugitives had fled, and the *Sĕjarah Mĕlayu* records how the founders of the new town Tumasik came from Bintan. The Javanese name, Tumasik, may have been given by men of Tumapel, who, after Majapahit triumphed over their country in 1293 owing to the absence of Tumapel's forces in Palembang, stayed in Sumatra and the Malay islands. Probably Kertanagara's attack on Hasin drove sea Malays (*wong asin*) not only to Bintan but to Muar and "Malacca lands," opposite which were the "Five Islands" that in early Chinese charts take the place of Malacca. Majapahit's attack about 1360

A.D. must have sent yet a further band in the same direction. From 1328 down to the death of Hayam Wuruk, the great Majapahit conqueror, in 1389, the Malacca Straits would be under Javanese influence and only later under the Siamese suzerainty of which Chinese annals and Siamese laws speak.

Such in briefest outline is Rouffaer's paper, which fills 174 pages and is to be continued further.

Though it has no direct bearing on this paper, it is interesting to note that Raffles' Museum has not only a neolithic celt from Singapore but also several from Kota Tinggi in Johore: all made from local stone.

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Burong olok-olok (jester-bird) is the Brown Gannet.

By A. W. Hamilton.

Burong olok-olok is mentioned in Wilkinson's Dictionary as an unidentified bird; but in reality the bird is not such a jest as its Malayan name would seem to imply, and it has been identified for me kindly by Mr. H. C. Robinson, as the Brown Gannet or *Sula-sula* (Linn.).

The brown gannet or olok-olok as it is called in Kedah is a dark plumaged sea bird with webbed feet, solitary specimens of which are usually met with at sea off the coast of Kedah in company with a flock of gulls.

A Malay Pantheist Charm.

By R. O. Winstedt, D. Litt. (Oxon.)

According to the Shi'ites Ali, the *baginda 'Ali* of Malay charms, was the repository of Islamic mystical knowledge. And there is a story how a great prince, who had been defeated by a mightier, asked him: "Teach me the charms which the Apostle of God taught you." It is certain that this was a request which the first Malay converts to Islam were always making to the early Indian missionaries. And the charms the missionaries taught them were held to be esoteric, like the *mantra* of the Brahmins and the secrets of Sufism. The Shi'ite heresies and the pantheism, orthodox and heterodox, to be detected in many Malay charms await closer study at any rate by English scholars. "The utterances put into the mouths of the eight or nine principal saints of Java betoken a rash mystic pantheism," says Snouck Hurgronje. "This same heretical mysticism found some opponents and many strong supporters in Acheen in the sixteenth and seventeenth centuries. The book of the "Perfect Man," al-Jili's *Insanu'l-Kamil,* was much studied in early days in Java and left its mark on the bizarre contents of numerous native tracts. Allah is the one, indivisible Being, exalted above time and space. Multiplicity is appearance. Only God exists." A full description of al-Jili's book can be read in Nicholson's "Studies in Islamic Mysticism" (Cambridge, 1921) or in Shaikh Muhammad Iqbal's "The Development of Metaphysics in Persia" (London, 1908). "Such mysticism" continues Snouck Hurgronje, "is found also in Arabian lands but only in small circles of the initiated, as half secret doctrines of the Sufis, cautiously concealed on account of the hunt of official theologians for heresy and of the suspicious fanaticism of the vulgar. In the East Indies, however, it formed woof and warp not only of learned speculation but of popular belief. Tracts with drawings and tables were used in the endeavour to realize the idea of the Absolute. The four elements, the four winds, the four righteous Khalifs, the four founders of the schools of law, the four sorts of attributes of God in dogma, the four grades of progress in mysticism, the four extremities of the human body and many other sets of four were for popular mysticism revelations of the one indivisible self of man; through the names of Muhammad and Allah, each in Arabic spelt with four letters, were symbolized the One Being. 'Who knows himself, knows his Lord and he who knows his Lord has knowledge of himself,' said these mystics." ("Arabie en Oost-Indie," Leiden, 1907). A *pawang*'s charm to call back to memory the medium in Kelantan's *main putĕri,* for example, invokes

Jour. Straits Branch R. A. Soc., No. 86 1922.

'Balang Abubakar, 'balang Umar,
'Balang Uthman, 'balang Ali!
Jaga sa-kali!
Angin shari'at, roma dĕngan kulit!
Angin 'itikad, daging dĕngan darah!
Angin tarikat, urat dĕngan tulang!
Angin ma'rifat, nyawa dĕngan bĕneh!
Angin ĕmpat di-dalam, ĕmpat di-luar,
Ĕmpat di-kanan, ĕmpat di-kiri,
Ĕmpat di-bawah, ĕmpat di-atas,
Jaga kĕluar
Di-pintu sir, pintu 'itikad, pintu chinta, pintu rasa.

Dr. Gimlette has collected and is printing the full charm in a new edition of his "Malay Poisons." I quote the extract to illustrate the *pawang*'s use of the mystic four.

Snouck Hurgronje's book on "The Achehnese," D. A. Rinkes' "Abdoerraoef van Singkel" (Friesland, 1909), B. J. O. Schrieke's "Het Boek van Bonang" and H. Kraemer's "Een Javaansche primbon uit de zestiende eeuw" (Leiden, 1921) should all be in the hands of the student of Malayan pantheism.

The Malay magician has a strange pedigree: first, animist, then Hindu and lastly, as Sufi mystic, the unconscious inheritor of Gnostic and Neo-Platonic doctrines. Brahminical *mantra*, to which even the Gods are subject, perhaps prepared his mind for the audacities of the Sufi. I will take one instance from Skeat's "Malay Magic" (pp. 587-588) :—

"Jibrail, Mikail, Israfil, 'Azrail;
Ye are four but with me five!
I sit on the seat of God!
I lean against the pillar of God's throne."

Is this a misconception or wilful corruption of al-Jili's description of the Perfect Man :—"he furnishes from himself an antitype to everything in existence—his heart stands over against the Pen, his soul over against the Guarded Tablet, his nature over against the elements. He stands over against the angels with his good thoughts." Another of Skeat's *pawang* (p. 581) speaks of "a white learned Shaikh who leans against the pillar of the Throne, who knows the Guarded Tablet, who writes down the Creed," (and, I suppose, of Muhammad in the phrase "the Sovereign Jewel who dwells above the Throne, controlling all the children of Adam.")

In this paper I translate a charm obtained in an East coast State of the Malay Peninsula : a promise to its possessor forbids me to divulge its home exactly. It was copied by me from a begrimed book probably a century old and transcribed according to the colophon from a still older manuscript :—

"A chapter to explain the charm called the Fortress of the Unity of God, practised by Maklab Setam. Whosoever would practise it should recite the *fatihah* first and give a present to its owner.

"A beginning should be made on Thursday night and the charm should be continued until the night of the following Thursday.

"It should be recited four times a night with a sincere vowing of the heart to unity with Allah and the vision of Him implanted in one's heart, until His Being permeates one and one has faith: 'I am lost in the universal and absolute Essence of God;' and one is lost to self and one's self becomes absolute and universal too:—

"In the name of God the Merciful the Compassionate. Oh God! grant peace to our lord Muhammad and the household of Muhammad who watcheth over my self and my friends and all my children and all the contents of my house and my property and the possessions of my hands with a sevenfold fortress from the fortress of God Most High; its roof—'There is no God but God,' and my wall 'Muhammad the Apostle of God,' and my key 'the might of God,' which may not be opened for ever save with His permission. Muhammad is like man and unlike man; he is like a chrysolite among stones.

"Now the import of the term 'fortress' is that we know that we come from not-being and to not-being shall return. For there is nothing evidently save the Being of God. And of a surety the Being of God never parts from His absolute essence, which carries out all His will, according to His word: 'His desire is accomplished by Himself and goes forth to no other than Himself save to not-being.'

"The intention of the term self is 'spirit,' one of the attributes of the knowledge of God Most High, which parts not from His essence and it becomes an objectified idea and is called man. Now the spirit is distinct and determined. Always the spirit yearns towards God.

"The intention of 'the house' is the body. The body is the place of the spirit and so the veritable place that reveals the Real God according to the saying of the Prophet, on whom be the peace of God: 'Whosever knows himself, knows his Lord.' The house was built of itself and though it will pass away, yet He whose house it is is the Reality who with His absolute essence is eternal.

"The intention of our 'property' is the liver and heart and lungs and gall and all that God Most High has created: according to His word:—'There is no strength in any one save the strength of Allah, lord of all the worlds both as regards things revealed and things hidden.'

"The intention of our 'possessions' is the ten senses, firstly the outward and secondly the inner. The outward are five: the sight of the eyes, the hearing of the ears, the taste of the tongue, the smelling of the nose and the touch of the hand. The inner also are five: consciousness, faith, insight, perception and judgment.

"The intention of the sevenfold 'fortress' is the creation by God Most High of man with seven attributes: life, knowledge, power, will, hearing, sight and speech. And seven parts of the body must be bowed to God in prayer: the forehead, the palms of the hands, the knees and the toes of the feet.

"The intention of the 'key' is because we have utter trust and union by surrendering ourselves to God Most High, according to His word: 'Hold yourselves fast to the cord of God which breaks not neither is there concealment of His will from mystical knowledge;' as said the Prophet on whom be God's peace:—'Nothing at all moves save by permission of Allah.' For we cannot behold aught if the cord break and it cannot break save by the will of God Most High, and there is no other can break it.

"And the intention of the 'key' is Muhammad Apostle of God for God is utterly hidden; none other save himself knoweth Him, for He cherisheth His glory. And the Reality of God Most High was revealed to the spirit of Muhammad our Prophet and from that Spirit God Most High created all this universe, and all the attributes of His secret wisdom were revealed: and so it is that Muhammad is called the 'key,' because he opened the treasure-house that was hidden, according to His word:—'I opened that which was closed.'

"And the intention of the protection of God is according to His word: 'God Most High is with thee wheresoever thou art,' according to His word: 'God is nearer to thee than the muscles of thy neck.'

"And the intention of 'roof' is the power of God to cover any of His servants with mercy according to His will, so that he be locked away from all enemies and danger in this world and the next, neither shall the lock be opened by genie or man save with the permission of God Most High."

Was it some such charm as this that Sultan Ahmad of old Malacca was expecting to learn from the Makhdum, whom he took on his elephant into battle against the Portuguese and who cried clutching the howdah with both hands, "Sultan! This is no place to study the Unity of God. Let us return." (*Sĕjarah Mĕlayu.* Chapter 34). In chapter 20 of the *Sĕjarah Mĕlayu* we have a reference to a Meccan, Maulana Abu Ishak a mystic (*fahan pada 'ilmu tasawwuf*) practising austerities, the author of a work the *Dar al-mathlum,* who despatched a pupil Abu Bakar to Malacca to teach the doctrine of Essence and Attributes and Works contained in his book. Sultan Mansur Shah got a Pasai pundit to translate it. All the notabilities of Malacca became pupils of the Meccan and even the Kathi sat at his feet after he had seen the newcomer with a halo of light about him. Then Sultan Mansur Shah offered a present of gold and two female slaves to any Pasai theologian who could solve the problems whether those in heaven and those in hell remain in their respective places for ever. A Pasai pundit replied openly that they did, quoting the authority of the Koran. But the Sultan of Pasai summoned him, hinted that an embassy could not have come from Malacca in quest of such an obvious answer and suggested giving in private a deeper esoteric meaning communicable, like all Sufi mysteries, only to the elect. The pundit took the hint and won the prize offered by Malacca. His esoteric solution is not recorded but al-Jili has given apposite Sufi answers:—"The powers of endurance of the sufferers in hell continues to grow—God never takes back his gifts and these powers come from God—until there appears in them a Divine power which extinguishes the fire, because no one is doomed to misery after the Divine attributes become manifest in him," or again "You may say, if you like, that Hell-fire remains as it was, but that the torment of the damned is changed to pleasure." (Nicholson, *op. cit.* pp. 136-7).

There is a record of one flagrant example of heterodox pantheism from Perak 30 years ago. Its exponent was sentenced to gaol. The creed he taught found God in man: "There is no God but God. I am God." (*La ilaha illa'llah! Aku Allah! Allah ia aku! Allahu aku! Allah ta'ala itu tiada mělainkan diri ini Allah.*) The creed, alms, the pilgrimage, the turban, the sixteen pillars of a mosque, the steps of its pulpit, the holding of a staff by the preacher, the kissing of the Black Stone at Mecca were all ascribed to disgusting sexual analogies. Not 44 but 40 members are required for the congregation of a mosque because man and woman together have 40 fingers and toes. Hell is anger and heaven sexual love. The Angel of Death is a man's eyes; the seven furnaces of Hell his knees; the bridge across the Fire his back-bone. One's right eye is Kiramun and one's left Katibin. And so on, a rigmarole of nonsense and an obscene travesty at an immeasurable distance of the Divine Love celebrated by the mystics of Persia.

The Malay Charm.

"Fasal pada měnyatakan 'ilmu kota tauhid yang di-amalkan oleh Tuan Maklab Setam (مكلب ستم). Dan barang siapa hěndak měngamalkan dia, maka di-bacha fatihah dahulu, di-hadiahkan kapada yang ěmpunya dia.

Maka di-mulaï kapada malam Jumaat hingga sampai kapada malam Jumaat pula; maka di-bacha-nya ěmpat kali pada sa-malam sěrta di-nadzarkan hati kita běrsunggoh-sunggoh kita měngěsakan kapada Allah sěrta di-shuhudkan masok ka-dalam fuad kita, sahingga pěnoh maujud di-dalam diri kita pun di-'itikadkan-lah: 'Aku ghaib di-dalam dzat mutlak dan itlak,' maka fana-lah diri kita sa-kali mělainkan diri mutlak dan itlak itu jua.

اللّٰهم صلى على سيدنا محمد وعلي آل محمد حوطت علي نفسي ورفتي
وابنافي واهلي ومالي ومامملك يدي سبع دورمن دورالله تعالي سقفها
لا اله الا الله ودرقها محمد رسول الله وقعلمها قدرة الله لايفتح ابدالا
باذن الله محمد بشرلاك البصر بل هو كاليقوت بين الحجر٠

Shahadan ada pun murad daripada 'kota' itu, tĕlah kita kĕtahuï asal kita itu daripada 'adam, mĕlainkan kĕmbali kapada 'adam pula kita. Ada pun yang ada nyata-nya itu hanya ujud Allah jua sa-mata-mata-nya. Bahawa akan ujud Allah itu sa-kali-kali tiada bĕrchĕrai dĕngan dzat-nya yang mutlak itu bagi dzat-nya; maka ia-itu-lah yang mĕlakukan barang-barang kĕhĕndak-nya sapĕrti firman-nya: فعال لما يريد, hĕrti-nya 'Bĕrlaku barang kĕhĕndak-nya di-atas diri-nya jua,' tiada bĕrkĕhĕndak kapada yang lain-nya daripada-nya itu, sa-sunggoh-nya pun kapada 'adam jua. Tamat.

Shahadan ada pun murad daripada 'diri' itu roh nama-nya, suatu sifat daripada Allah ta'ala, tiada bĕrchĕrai dĕngan dzat-nya; dan ia-lah jadi suatu hakikat-nya, maka di-namaï 'insan.' Ada pun roh itu mufassil lagi mukaiyad. Bahawa sa-nya roh itu bĕrkĕhĕndak sĕntiasa kapada Tuhan-nya. Tamat.

Shahadan ada pun murad daripada 'rumah' itu jasad nama-nya. Ada pun jasad itu tĕmpat (? ركأن) roh itu, kĕrana itu-lah sa-bĕnar-bĕnar-nya tĕmpat kĕnyataan Hakku'llah ta'ala, sapĕrti sabda Nabi salla'llahu 'alaihi wa-sallama: 'Man 'arafa nafsahu fakad 'araf rabbahu,' hĕrti-nya, 'Barang siapa mĕngĕnal diri-nya, maka bahawa sa-nya mĕngĕnal-lah Tuhan-nya.' Ada pun rumah itu di-jadi sĕndiri-nya, sunggoh pun akan fana mĕlainkan ĕmpunya rumah-nya Hak yang kĕkal dĕngan dzat-nya yang mutlak itu.

Shahadan ada pun murad daripada 'harta' kita itu ia-itu sapĕrti hati dan jantong dan paru-paru dan hĕmpĕdu dan barang yang di-jadikan Allah ta'ala sa-mata-mata-nya sapĕrti firman-nya: وماتشأون الا ان يشأ الله رب العالمين hĕrti-nya, 'Tiada kuasa sa-orang jua mĕlainkan dĕngan kuasa Allah kapada sakalian 'alam ini daripada dzahir-nya dan batin-nya.' Tamat.

Shahadan ada pun murad daripada 'milek' pada kita itu pancha indĕra yang sa-puloh itu, pĕrtama-nya dzahir, kĕdua-nya batin. Ada pun yang dzahir itu lima pĕrkara: pĕnglihatan mata, pĕnĕngaran tĕlinga, pĕrasaan lidah, pĕnchium dĕngan hidong, pĕnjabat dĕngan tangan. Ada pun pancha indĕra yang batin itu lima pĕrkara pula: sir, 'itikad, chita, rasa dan waham.

Shahadan ada pun murad daripada tujoh 'kota' itu, kĕrana Allah ta'ala mĕnjadikan kita ini tujoh sifat, maka di-sĕmpurnakan insan itu tujoh sifat: sifat hayat, 'ilmu, kudrat, iradat, sama', basar, kalam. Dan wajib sujud kapada Allah ta'ala tujoh anggota: pĕrtama-nya dahi, kĕdua-nya tapak tangan, dan kĕtiga-nya lutut, dan kĕĕmpat-nya kaki dĕngan pĕrut-nya jari.

Shahadan ada pun murad daripada 'kunchi' itu sĕbab-nya sangat-sangat yakin kita dan tauhid kita pada mĕnyĕrahkan diri kita kapada Allah ta'ala, sapĕrti firman-nya: وعتصمو حبل الله ، جميعا لاتفرقو hĕrti-nya, 'Bĕrpĕgang kamu dĕngan tali Allah yang tiada putus-nya lagi tiada tĕrlindong barang sa-kĕhĕndak-nya itu daripada ma‘rifat-nya,’ sapĕrti kata Nabi salla’llahu ‘alaihi wa-sallama: ‘La takhriku dzarratin illa bi-idzni’llah,’ hĕrti-nya, ‘Tidak bĕrgĕrak barang suatu jua pun, mĕlainkan dĕngan idzin Allah? Kĕrana tiada dapat di-pandang dĕngan mĕmutuskan dan tiada putuskan mĕlainkan dĕngan kĕhĕndak Allah sa-mata-mata, maka tiada dapat lain-nya. Tamat.

Shahadan ada pun murad daripada ‘anak kunchi’ itu Muhammad Rasulu’llah. Kĕrana Allah itu sangat-lah tĕrbunyi, tiada siapa mĕngĕtahuï-nya akan dia mĕlainkan pada diri-nya. Sĕbab itu-lah Allah ta‘ala mĕmĕliharakan kĕbĕsaran-nya itu, maka Hakku’llah ta‘ala pun tajalli kapada roh Nabi kita Muhammad, maka roh itu-lah Allah ta‘ala mĕnjadikan sakalian ‘alam ini; maka dzahir-lah sakalian-nya sifat ‘ilmu-nya yang batin itu. Maka sĕbab itu-lah di-katakan ‘anak kunchi,’ kĕrna mĕmbukakan pĕrbĕndaharaan yang tĕrbunyi, sapĕrti firman-nya: كنت كنز مخافيان hĕrti-nya, ‘Ada aku bĕrharta yang tĕrbunyi-nya.’ Tamat.

Shahadan ada pun murad daripada pĕlihara Allah sapĕrti firman-nya: وهو معكم انما كنتم hĕrti-nya, ‘Allah ta‘ala itu sĕrta kamu barang di-mana kamu,’ sapĕrti firman-nya: ‘Allah tĕrlĕbeh hampir daripada urat lĕher.’

Shahadan ada pun murad daripada ‘atap’ itu kuasa Allah atas barang yang di-kĕhĕndaki-nya pada mĕnudong daripada saorang hamba dĕngan rahmat; maka jadi-lah tĕrkunchi daripada sakalian sĕtĕru-nya dan bala-nya daripada dunia akhirat; maka tiada-lah tĕrbuka kapada sakalian jin dan manusia mĕlainkan dĕngan izin Allah ta‘ala. Tamat.

Notes on the Enemies of Butterflies.

BY C. L. COLLENETTE.

On 24th January, 1922 while collecting larvae and pupae of the common Skipper (*Hidari irava*) which can be found plentifully in Singapore in rolled up sections of the banana leaf, I noticed that three or four butterflies of the species were flying round the flowers of a neighbouring Papaya tree. After watching them at close quarters for a minute or two, I espied one which appeared to have deformed wings, at rest on a flower. Looking more closely, I found that it was in the clutches of a Praying Mantis. (*Rhombodera basalis*). The Mantis held the butterfly in its fore legs and occasionally brought it up to its mouth to suck the juices, holding it away again while it considered them. After watching this for a few minutes I took the Skipper away, the Mantis holding on until it was nearly pulled from the tree and with no apparent fear of my fingers.

The Mantis was stationed on a small bunch of the Papaya flower buds, with an open flower half an inch in front of its doubled fore legs. Skippers were flying from flower to flower, and I waited in the hope that one would fly within its reach. A foolish individual finally blundered right on to its back and then settled on the very flower which it guarded. The Mantis flinched a little at the touch, drew its front legs close to its body and then made what I considered a rather clumsy grab at the insect. The Skipper flew away none the worse.

Other Skippers visited flowers three or four inches away, being followed by the Mantis with a turn of the head.

Then, as dusk came on, a Hawk Moth with pink in its wings, probably *Hippotion boerhaviae*, paused in space opposite the special flower, but apparently saw the preliminary inward swing of the Mantis' fore legs, and darted off.

Shortly afterwards, the same Hawk Moth, or another of the same species, hovered in front of the flower and put its proboscis down the long tube. The Mantis made the same grab as before, but again missed its quarry. Darkness and mosquitoes prevented further observations.

Another Mantis had been sitting all this time on the underside of a leaf, but beyond turning its head when a butterfly passed, with the very smallest chance of being able to make a capture, it did not move.

During the following three weeks I visited the Papaya tree on several occasions and always found the same two Mantids. They were the same shade of light green as their background and it needed the closest scrutiny to detect them. On each visit they were either at rest under leaves or walking about on the leaf stems, although butterflies and other insects were often present on the flowers.

I do not think that these Mantids were capable of reasoning out that insects were to be caught on the flowers. Although they were plainly interested in anything moving within six inches of them, they would remain just out of reach of a promising spot without attempting to go nearer to it.

In the Botanic Gardens, at midday on 5th February 1922, I was watching four or five "brown" butterflies (*Ypthima*) settled on a single head of flowers on a shrub. A patch of yellow and blue higher up the branch caught my eye, and revealed a large "Chamelion" (*Calotes cristatellus*). It was some six inches from the butterflies, with its head turned towards them in a position of attention. I went quietly back to a distance and watched for twenty minutes, but the lizard did not stir in the slightest, possibly because I had alarmed it. From a distance at which the butterflies could easily be seen, it was most difficult to pick it out from the surrounding leaves. At subsequent visits I did not see it, although the flower-head continued to attract butterflies for some time.

Another danger to butterflies is the spider. In the Changi jungle, on 29th January, 1922, I found an *Euthalia merta,* a powerful butterfly with a strong flight, completely helpless but undamaged in a web spun across a path. The spider could not be found.

Instances of butterflies being preyed upon by their enemies are not easy to observe, but the dangers which they are exposed to, such as those indicated in these notes, are very many.

* * *

The Irregularity of a Spider's Feeding.

BY I. H. BURKILL.

One afternoon in 1908 my attention was drawn to an irridescent green hunting spider upon the wall of my house in Calcutta. There were many mosquitoes about at the time; and I asked myself if this spider fed upon them, and accordingly caught it for the purpose of observation. The source of the mosquitoes was quickly found in the servants' quarters, the brood of larvae appropriated, and by means of a glass funnel over the vessel containing the larvae and pupae, the flies as they emerged were forced to enter a glass fronted box which became a cage for the spider. A small vessel of water was placed in the cage so that the air was constantly moist. The temperature went uncontrolled, and as it was the hot weather ran to maxima above 100° F. The cage was not moved from the room where the spider had been caught. The spider was now supplied with fresh mosquitoes daily and the "kills" counted over 63 days, *i.e.* from May 25th. to July 26th. On July 26th. as I was proceeding on tour, the observations were discontinued, and the spider, a female, weighed: she weighed .075 grammes. The spider put into spirit, was posted to a specialist in spiders, for determination, but the parcel miscarried, and the name of the species is not known.

The spider in the 63 days over which the observations were extended, killed and devoured 355 mosquitoes; but most irregularly. When caught she was hunting; on the next day she laid eggs, and then fasted on and off over a week: for two days after this she fed ravenously, killing 17 on the first of the two and 10 on the second; then followed a fast day, a day when 2 were killed, and another fast day; after this on five days she fed considerably, killing in all 58 mosquitoes; then came a three days complete fast; three days of moderate feeding, a day's fast, and so on. Once in July she fasted completely for seven days. Her maximum was 17; and this she reached on three occasions.

Newly a copy of the *Transactions of the Wisconsin Academy of Sciences, Arts and Letters,* vol. XIX. has come into my hands, wherein at p. 524 is an account by Miss Catherine Elizabeth Nebel of the feeding of seven individuals of the spider, *Aramea sericata,* which she watched for periods up to fifteen weeks, feeding them upon the fruit fly,—*Drosophila ampelophila.* Her spiders fasted and fed as irregularly as mine: but she noted that if the temperature of her laboratory were raised to 100° F. the spiders responded by an increased feeding upon the second day.

It should be noted that these were voluntary fasts, not involuntary which spiders are well known to endure for very long periods.

My spider was never seen to take any notice of a mosquito which did not move. What an advantage rest by day would seem to confer on the mosquito!

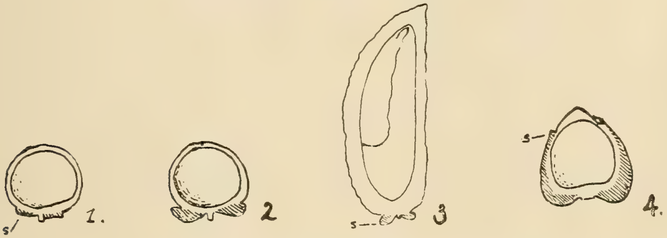
Jour. Straits Branch R. A. Soc., No. 86 1922.

Notes on Dipterocarps.

No 6. On the genus Pachynocarpus.

By I. H. Burkill and F. W. Foxworthy.

Pachynocarpus is a small genus of the natural order Dipterocarpaceae, with its nearest affinity to the somewhat polymorphic genus *Vatica*. If *Vatica* be divided into two or more genera, then *Pachynocarpus* is abundantly distinct; but if, as several botanists think, *Vatica* in its variety is still rightly considered a single genus, then it is a debateable point whether *Pachynocarpus* should be kept apart from it. It was defined in 1860 by Sir Joseph Hooker (Trans. Linn. Soc. XXIII., p. 159) upon material collected by James Motley in Borneo and sent by Mr. E. S. Barber* of the Eastern Archipelago Company to Sir William Hooker at Kew from Labuan. *Vatica* had been defined long before,—first in 1771 by Linnaeus (Mantissa II, p. 152) upon a specimen from Ceylon (mislabelled China); then it had been recognized as appearing in the Philippine Islands in a second species (Blanco, Fl. Filip., ed. 1, 1837, p. 401) and in the islands of Borneo and Sumatra in two more species (Blume, Mus. Bot., 1852, p. 31). To these have been added other species up to the number of 55,



Figs. 1 and 2, the shells of two fruits of *Vatica Wallichii* gathered from under the same tree in the Tasek Gelugor Forest Reserve, Province Wellesley, showing extremes in the development of the calyx (shaded): 3, a fruit of *Vatica ridleyana* in vertical section: 4, shell of the fruit of *Pachynocarpus umbonatus* in vertical section. All reduced to one-half and in all the calyx shaded. The cotyledons are indicated in 3.

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* The Director of the Royal Botanic Gardens, Kew, kindly informs us that Edmund Scott Barber was Resident Director of the Eastern Archipelago Company at Labuan at the time of the murder of Motley (see Jour. Straits Branch, Roy. Asiatic Soc. No. 79, 1918, p. 37) and purchased at the sale of Motley's effects, the latter's herbarium. Under the date Nov. 16th, 1859, he wrote to Sir William Hooker at Kew, telling him this and that he would forward the herbarium; and explained that Motley when alive had intended to do so. He also offered a collection of mosses. In a second letter he stated that Motley's herbarium consisted of about 400 specimens, and advised the sending to Kew of numerous small packets of mosses and "a remnant of Motley's herbarium not arranged."

Jour. Straits Branch R. A. Soc., No. 86 1922.

with a distribution from Ceylon to New Guinea, and northwards as far as the eastern extremity of the Himalaya. More or less in the middle of the area occupied by Vaticas occurs *Pachynocarpus.*

From the species of *Vatica* nearest to it, the first described *Pachynocarpus,—P. umbonatus,*—differs in the degree of adnation of the calyx, as the diagrams above indicate.

Upon this adnation Hooker defined the genus: and in 1862 in the *Genera Plantarum* (i., p. 192), he remarked succinctly that *Pachynocarpus* differs in no other way from *Vatica,* of which genus but seven species were known to him. Alphonse de Candolle in 1868 (Prodromus, XVI, part 2, p. 605) retained *Pachynocarpus,* altering the definition by pointing out that the stamens may be 15 in number, instead of 10, as had been stated. Burck, nineteen years later (Ann. Jard. Bot. Buitenz. VI, 1887, p. 223), sunk the genus to the position of a section of *Vatica,* at the same time describing as a new species *Vatica verrucosa.* Heim followed (Recherches sur les Diptérocarpacées, Paris, 1892, p. 107) with the restoration of *Pachynocarpus,* and with a subdivision of *Vatica.* Sir George King (Journ. As. Soc. Beng., LXII, 1893, p. 136) took Heim's view; and at the same time he transferred *Vatica Wallichii,* Dyer, and *Vatica ruminata,* Burck, to *Pachynocarpus,* in a way which we find wrong, and he added a new species, —*P. Stapfianus.* Sir Dietrich Brandis, the last comprehensive writer upon the order, followed suit (Journ. Linn. Soc. Bot. XXXI, 1895, p. 136): he placed the species as King had done, except that he did not reduce *Vatica ruminata,* but called it *Pachynocarpus ruminatus.* He had described a *Vatica Ridleyana* (Hooker's Icones t. 2401), which, from its obviously close relationship to *Vatica Wallichii,* Dyer, Ridley in the Singapore herbarium, and as a follower King, transferred to the genus *Pachynocarpus;* and this transference appeared in Mr. James Anderson's "*Index of Plants, Botanic Gardens, Singapore*" as *P. Ridleyana,* but wrongly ascribed to Brandis. The result of all these writings is that we have six names under Pachynocarpus:—

P. umbonatus, Hook. f.;

P. verrucosus, Heim, transferred from the genus Vatica, where it stood as *.V verrucosa,* Burck;

P. Wallichii, King, including *Vatica Wallichii,* Dyer;

P. Stapfianus, King;

P. ruminatus, Brandis, submerged from *V. ruminata,* Burck, by King into *P. Wallichii,* but restored to *Pachynocarpus* by Brandis; and

P. Ridleyanus, J. W. Anderson, transferred from *Vatica Ridleyana,* Brandis.

Burck had described a *Vatica obtusa* (l.c., p. 228) placing it next to *V. ruminata* with the remark "anne rectius *V. ruminatae* varietas." If so near *V. ruminata* as that and if *V. ruminata* is a species of *Pachynocarpus,* then so also must this species be; and therefore we may have seven to deal with.

For our work we have borrowed the specimens left in the herbarium of the Royal Botanic Gardens, Calcutta, by Sir George King, and examined them carefully, along with the material which we have been able to accumulate ourselves from within the Malay Peninsula. The result is a great reduction and a return towards older views. While reserving an opinion upon the advisability of retaining *Vatica* as it stands, we cut out of *Pachynocarpus* most of the species added to it. We consider *P. verrucosus,* Heim, unlikely to differ from one of the other species of the genus: *P. Wallichii,* King, to consist of *Vatica Wallichii,* Dyer, and a *Pachynocarpus* confused; *P. Stapfianus* not to differ from the second part of King's *P. Wallichii*: *ruminatus* to be the same as *Vatica Wallichii*: and *P. Ridleyanus* to be a Vatica likewise. Moreover we find at present no reason to keep up the two species *Vatica obtusifolia,* Ridley, and *V. Kelsalli,* Ridley, described in the Journal of the Straits Branch of the Royal Asiatic Society, No. 34, 1910, pp. 26-27: both appear to be *Vatica Wallichii,* Dyer.

In the Calcutta herbarium are two sheets of *Pachynocarpus umbonatus* from the "Herbarium Hookerianum" with flowers; and in a capsule upon one of them is a detached fruit. It is clear that they were part of the material upon which the species was described. Attached to one of the sheets is a fragment of Chinese paper bearing this note:—"160, Dipterocarpeae—? Vatica. A tree 1 to 1½ feet diameter; wood very hard close and lasting, when cut yellowish brown, turning nearly black on drying; bark smooth, light coloured; yields a yellow transparent copal-like resin. The gum called in Europe "dutch copal." Rassak bunga—flowering rassak; blooms cream-coloured, said to be very showy; tinged with pink when in blossom; very sweet scented. Loobook dana." In the Transactions of the Linnean Society the wood of *Pachynocarpus* was described by Sir Joseph Hooker, not as in this note, but as soft and white, and the wood of *Cotylelobium melanoxylon* Hook. f. which is also called "rassak" § was described as yellow, when seasoned turning black. Both species are said by him to have been got upon the north coast of Labuan, but Mr. T. H. Eley now Resident at Labuan, is unable to ascertain for us that there is a bay or stream-bend there, known at Lubok dana: and we are not confident that Lubok dana cannot be for instance on the Sungei Banyu Irang in Banjermassin. The note quoted appears to have been Motley's. It is to be asked not only if Sir Joseph Hooker wrongly assumed Lubok dana to be in Labuan, but why the discrepancy in the description of the wood, or if the note has been placed upon a wrong sheet, and belongs to *Cotylelobium melanoxylon*: but then the number 160 Hooker gives to the other. Sir George King had these specimens before him when he wrote his account of *Pachynocarpus.* It is to be observed that he held his material of *Pachynocarpus* from the Malay Peninsula to differ from them; and his opinion always deserves consideration: but beyond that he went wrong in not seeing that the peninsular material was different from the really unlike *Vatica Wallichii.*

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§ "Rapak" the name quoted by Hooker is an error—a misreading of the word "rassak" written by Motley with the first s long.

In considering whether King was right to keep apart that Malayan material from the Bornean type, and right also to distinguish specifically *P. Stapfianus,* we have met with much difficulty. We have ended in keeping the peninsular and the Bornean material apart, more from caution than from conviction, and find the Pachynocarpus-portion of King's *P. Wallichii* not separable specifically from his *P. Stapfianus.* If however, there is a confusion in Motley's specimens, and it can be of a *Vatica* in flower mixed with a *Pachynocarpus* in fruit (flowers and fruit were probably gathered months apart), then the flowering specimen is likely to be a flowering *Vatica* and perhaps *V. Wallichii,* while the fruiting specimen (which is *P. umbonatus*) *may* not differ from *P. Stapfianus.* More study in Borneo is needed to decide this both near Labuan, and because Motley's last years were at Banjermassin in the south east.

At flowering time there is no sure mark in a herbarium specimen by which *Pachynocarpus* can be distinguished from *Vatica Wallichii.* That led to King's mistake of identifying the two; and a fair measure of variability in the calyx caused him to think that the adhesion which is not visible in the flower, came quite late in fruit-development, whereas it commences from the fall of the petals. The diagrams printed above indicate some of the variation in the calyx. We have had good opportunities of studying *Vatica Wallichii* alive, because it is a tree cultivated in the Economic Garden, Singapore, and because also it is by no means uncommon round the coasts of the Malay Peninsula. It has been planted on dry ground in the Economic Garden and has grown well; but its natural habitat is upon ground liable to flooding. Herbarium specimens prove its occurrence down the west coast of the Peninsula, certainly from Province Wellesley, and possibly from Trang in Lower Siam, to Singapore; and down the east coast from Kuantan to Singapore. It, by being identified with Burck's *Vatica ruminata,* is known also from Bangka. It is possible that Dr. Haviland's flowering specimens, Nos. 1907 and 1908, from near Kuching, Sarawak, may be it; but fruits are necessary for making this sure.

To Malays it is one of the several trees called Resak. Resak paya (swamp resak) is a name for it in Pahang and so are Resak pasir (pasir may mean sand, sea beach, or a certain quality in a wood which causes it to take the edge off cutting tools) and Resak laru,* which last belongs also to *Pachynocarpus Stapfianus.* Goodenough, Ridley's collector, called it Damar Mata Kuching on specimens collected in Singapore island and in Malacca. Derry in Malacca called it Kayu Merbatu Pasir.

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* Laru is a substance used in making sugar. In this particular case, it is said that punctures or cuts are made in the bark; the resin which exudes is collected and placed into syrup which is being boiled, causing it to harden into sugar with a yellow colour.

The wood of *Vatica* and *Pachynocarpus* seems to be very much alike. The sapwood of *Vatica Wallichii* is white or pale yellow and the heartwood is brownish yellow, becoming much darker after exposure to the air. There is less of resin in the wood than is usually found in most members of the order.

A pale damar runs out of injuries and glazes over the stem.

The tree attains no great height, reaching say 60 feet and the spread of its branches is narrow, say 10 feet from the trunk. If grown in the open it keeps its lower branches and is then leafy nearly to the ground; but in high forest its trunk is straight and branchless to 30 feet or more. A tree 50 feet high may possess a diameter at breast height of 20-30 inches. The bark is light grey and smooth.

Its times of flowering in Singapore are uncertain doubtless in response to the uncertainty of the weather. All trees flower together. Flowering however in the Peninsula seems to be most common in April or May.

Individual trees differ from each other in small points. The leaves of some dry darker than the leaves of others. The flowers vary from a pale cream to milk-white; in some there is a touch of red upon the outside of the bud; examined at sun-down the petals may be bent just to a right angle on their claw, in others more. These variations characterise whole trees. It may be that the trees whose flowers are most pigmented, are the trees whose leaves dry darkest; but this has not been proved. A flower whose petals are bent through a right angle is figured below. The small eye is noteworthy.

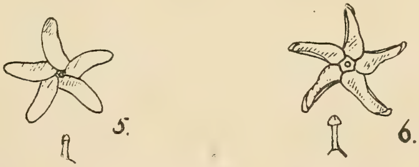


Fig. 5 on the left, a flower of *Vatica Wallichii* in face view: Fig. 6 on the right, a flower of *Vatica Ridleyana*, also in face view. Both nat. size. Below each is the stigma and style enlarged.

The flowers have a strong and pleasant scent. By their multitude they make the tree conspicuous at flowering. They open about dawn, and fall about the next dawn. The stamens number 15;—if 10 in such plants as that upon which *Vatica Kelsalli* was founded, then so by reduction, accidental probably. The flowers face downwards and outwards chiefly. Three or four distinct patches of glandular tissue occur in a row upon the underside of the leaves where the lateral veins break into loops. These leaves last for about 3 years. Six months pass before the fruit is ripe. The fruit is dry and water-distributed chiefly by means of floods. We have seen this process in operation in the Tasek Gelugor Forest Reserve in Province Wellesley, where heavy rain had flooded the low and level ground, and the fruits were stranded in lines at the limit of the flooding. The duration of the floating was tested and described in a note by one of us (Journ. Straits Branch Roy. As. Soc. 81, 1920, p. 75) where the wrong generic name *Pachynocarpus* was used for it. The average duration of floating in that experiment was found to be 22 days. The germination was described in the same place. The capsule is ruptured along three lines predetermined by weaknesses in the walls. These three lines are more clearly shown in the capsule of the related *Vatica Zollingeriana,* A. DC., which is figured here, because it is instructive in regard to the nature of the less clearly marked lines of rupture in *Vatica Wallichii.*

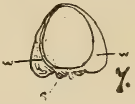


Fig. 7. Shell of the fruit of *Vatica Zollingeriana*, A.DC., in vertical section showing the sepals (s), and the wall cut on one side down one of the lines of rupture, and on the other through the thick swollen mid-part between. Doubtless *V. Zollingeriana* is water-distributed, for the swollen part is such as would keep it floating.

The fruiting calyx of *V. Wallichii* is developed to a somewhat variable extent: sometimes it is humped as in the first figure above; sometimes it is rather flat, as in the second. The two figures were from fruits picked from the ground of the Tasek Gelugor Forest Reserve at the same spot, and appeared to be the product of a tree immediately above them.

Our material of *Vatica Wallichii* is as follows:—

PROVINCE WELLESLEY. In the Tasek Gelugor Forest Reserve, with fruit, in September 1921, *Burkill 6599!*

PENANG. Without precise locality, *Wallich Cat. 9018!*

PERAK. Ulu Sapetang, with young fruit in Feb. 1909, *M. Hashim 228!;* Larut, within 100 ft. of sea level in dense jungle, with young fruit in January 1884, *King's Collector 5423!;* on low hills, with fruit in February 1884, *King's Collector 5546!;* Briah upon the Larut plain, with young fruit in December 1892, *Wray 4223!;* banks of the Bernam river at 300-400 ft., with young fruit, in April 1886, *King's Collector 8857!*

PAHANG. Temerloh, with fruit in November 1921, *Awang Lela 5470!;* Kuantan in the Baloh Forest Reserve, with fruit in March 1920, *Yeob 873!;* Kelebor near Kuala Rompin, with fruit in April 1921, *Bidin 4182!*

SELANGOR. Kelamber Forest Reserve near Klang, in swamp with fruit in September 1919, *Hamid and Yeob, 3295!*

MALACCA. Without locality, in flower and with young fruit, *Maingay 201!;* Sungei Udang, with fruit in July, 1894, *Goodenough 1968!*

JOHORE. Kuala Sembrong, with fruit in October 1892, *Lake and Kelsall!;* Kota Tinggi, on the riverside, with fruit in December 1892, *Ridley!*

SINGAPORE. Kranji with fruit in 1893, *Goodenough!;* Changi, with flowers and detached fruit in May 1889, *Goodenough!;* in flower and with half ripe fruit in April 1893, *Ridley 4740!,* and with flowers and fruit in May 1889, but fruit detached and may not be of this date, *Ridley 1839!;* Toas with fruit in March 1893, *Goodenough 5075!;* Tampinis road, with young fruit, in (? April) 1893, *Ridley 4739!:* Botanic Gardens in flower March 1916, November 1919, January 1921 and in fruit October 1916, July 1921, *Burkill 1077!, 1265!, 1267!, 1266!, 1270!, 5969!, 5970!, 5971!, 5972!, 5973!, 6434!, 6435!, 6436!*

BANGKA. Without precise locality (the type of *V. ruminata* Burck) *Teysmann!* cult. in Hort. Bog. VII, c. 4a with fruit, No. 204! and with flowers and fruits, *van Slooten!*

It is exceedingly probable that the following also belong to *Vatica Wallichii,* but they lack fruit.

LOWER SIAM. Trang upon the bank of the river, in dense jungle, with flowers in March 1881, *Kunstler 1437!*

PROVINCE WELLESLEY. Nibong Tebal with flowers, in January 1900, *Curtis 3458!* (part of which is the type of *V. ovalifolia,* Ridl.).

PERAK. Larut in open jungle with flowers in September 1884, *King's Collector, 6594!,* and in May 1884, *King's Collector 6070!, 5763!*

PAHANG. Kuantan, with flowers, in June 1921, *Mohamad 3733!;* at the Chini Lake with flowers in April 1919, *Lambak 3173!;* on the Rompin river in the Menchali Forest Reserve, with flower in May 1919, *Foxworthy 3232!*

MALACCA. Sungei Udang with flowers in 1892, *Derry 961!*

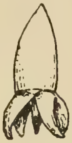
JOHORE. Penyabong, with flowers in May 1918, *Foxworthy 1197!;* Skudai river with flowers in August 1879, *King!;* Jaffaria with flowers in August 1879, *King!*

SINGAPORE. Pulau Seletar in flower, 1892, *Ridley 4942!* and in flower April 1892, *Ridley 6202!,* and in 1894, *Ridley 6205!;* Chan Chu Kang by a stream, in flower in October 1892, *Ridley 4449!;* Changi in flower in May 1889, *Goodenough!;* Tampinis in flower in April 1916, *Burkill!*

Vatica Ridleyana is a species which occurs in a state of nature in the Botanic Gardens, Singapore, where it flowers and fruits at rather wide intervals. It may be that a specimen in the herbarium of the Royal Botanic Gardens, Calcutta, collected on Bukit Timah in Singapore island, is also *Vatica Ridleyana,* but as it is without the characteristic fruits it is impossible to make sure of this: it was collected in 1894: in 1892 Mr. Ridley got the species on Bukit Mandai (No. 8943) and also at Changi (Nos. 4447! and 4448!), since which dates clearing has been extensive; and the tree has not been recognised in recent years outside the Botanic Gardens. In the Gardens there are several individuals. The tallest is in area N, tree No. 795: the second tree No. 815 in area V, and others are in area U and V. It is not a tree of lowlying ground; and its large fruits sink at once in water. Such distribution as they get must be by being rolled along the floor of the forest or (and this is the usual distribution of many forest trees of the second rank) by transport through small distances by animals seeking food.

Tree No. 795 in the Botanic Gardens is about 100 feet high. Its trunk is 62 in. in circumference at breast height: the bark is medium grey. The spread of the branches is about 30 feet from the trunk, the lower 60 feet of which are straight smooth and branchless.

The flower drawn above was produced by tree 815 in January 1921; and fruits were not ripe until the following November. They fell very deliberately through three months or more.



8.

Fig. 8. A half ripe fruit of *Vatica moluccana*, Burck, showing the development of the reflexed calyx. The fruit is figured to illustrate a stage in the series of species connecting *Vatica Wallichii* with Vaticas of the section Retinodendron.

The fruit of *Vatica Ridleyana,* if elongated, is always turned to one side as drawn; but tree No. 815 produces longer fruits by ¾ in. than tree No. 795, in which the apex is nearly straight. The leaves have glandular patches just as those of *Vatica Wallichii.*

These glands are slightly concave, and carry brown hairs.

The spongy parenchyma of the lower surface of the leaf gives place over their area to something denser. No excretion has been observed to occur on them; but probably there is one.

Pachynocarpus umbonatus, by the view taken here, is the tree of Borneo sent by Barber to Sir William Hooker at Kew,—certainly the fruiting part of the specimens, but not quite so certainly the flowering part. These flowering branches show thinner leaves with less prominent veins than any peninsular specimen which we ascribe to the genus. And as leaves so thin seem to be within the range of variation of the leaves of *Vatica Wallichii;* and as dried flowers offer no character by which the two can be distinguished, it is well not to state dogmatically yet that *P. umbonatus* and *P. Stapfianus* are distinct species.

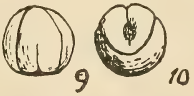
Pachynocarpus verrucosus, (Burck) Heim, described upon a specimen from Sungei Landak in Borneo, north east of Pontianak, collected by Teysmann, will probably be united with one of the other species when fully studied.

Pachynocarpus Stapfianus is like *Vatica Ridleyana* a tree of rising land. The result is that flowering herbarium specimens unauthenticated by fruits, if from the interior of the Peninsula, are more likely to be it than the similar *Vatica Wallichii*. We know it to occur in the Siamese Malay States, Penang, Perak, Selangor, and Pahang. King's Collector records it as 80-100 ft. high, with a girth up to 3 ft. As it occurs at Bangi, Selangor, it is a tree 38 ft. 2 in. high, and 3 ft. 1 in. in girth at breast height. The height to the first branch is 6 ft. 4 in., and the girth just below the first branch 2 ft. 11 in. The spread of the crown is 26 ft. 4 in.

We have not measurements of any other trees. Its leaves in most cases dry dark as in some specimens of *Vatica Wallichii*, so that by their colour there is no means of separating the two when dry. Of the flower in life we are not able to give a figure. We have records of flowering in July and October in different places and different years: and of fruiting in January, February, April and July.

The fruit when half ripe is acute to blunt; and when fully ripe by the rounding of the fertile loculus becomes globose and generally loses the minute apiculus representing the style. It has not the dimensions ascribed to it by Sir George King in any of the type specimens but is about one inch long. The calyx is adherent through ½-⅔ of the length of the fruit. It and the exposed surface of the carpellary wall above it are lenticellate, sometimes little, sometimes much. The tip of the sepals persists and is free until the fruit is half ripe, then it generally falls off. The months when fruit is most likely to be found are March, April and May.

The embryo is quite unlike that of *Vatica Wallichii*. The outer cotyledon is half-wrapped half-folded round the placentar cotyledon; and both reach the apex of the fruit cavity:



Figs. 9 and 10, the embryo of *Pachynocarpus stapfianus* ½ nat. size.

Our material of *Pachynocarpus Stapfianus* is as follows:—

LOWER SIAM. Tapli Klong Wan towards the Tenasserim border in fruit in March 1919, *Hamid 3781!*

KEDAH. Lankawi island, at Sungei Batu Asah, in fruit February 1911, *Mohamed Haniff 15553!*

PENANG. Telok Bahang, at 500 ft., with fruits in July, 1888, *Curtis 1161* in one part!; Batu Feringgi in fruit without any date, *Forest Guard!;* Government Hill at 500 ft., with flowers in February 1887, *Curtis 1161* in the other part!, and in April 1890, with flower and fruit in March 1900 (obviously date of flowering; date of fruit uncertain) *Curtis A!;* Bukit Penara, with flowers and detached fruit, in March, *Curtis 1391!*

PERAK. Larut, in open jungle at 300-850 ft., in April 1885, *King's Collector 7466!;* Gopeng in open jungle, in April 1884, *King's Collector 5932!,* and in open jungle with fruit in May 1884, *King's Collector 6132!,* September 1885, *King's Collector 8186!* near the Bernam river at 300-400 ft. with fruit in April 1886, *King's Collector 8857!*

SELANGOR. Bangi, with fruit in January 1920 and with flower in October 1921, *Forest Guard Ahmat 5008!*

PAHANG. Baloh Forest Reserve, Kuantan District, in fruit in March 1919, *Forest Guards Yeop and Abdul Rahim 3145!* (a condition having the fruit so covered with lenticels that it appears different, and it is possible that when more fully known it will have to be distinguished.)

Flowering specimens which seem to be *Pachynocarpus Stapfianus* but cannot be assigned to it positively are King's collector's No. 6594 from Larut, 500-800 ft., with flowers in September 1884, his No. 5763 from Gopeng with flowers in April 1884, his No. 6070 from Gopeng, with flowers in May 1884, Curtis' No. 1218 from Sungei Penang Road at 1,000 ft. (doubtless the more western Sungei Penang of the two in the island of Penang); another collected by Curtis, without number, in September 1887, from the Experimental Nursery at 2,000 ft. on Government Hill, Penang, and a third with flowers in August 1880; King's collector's further specimens from the Bernam river bearing his number 8753, having been got in flower in April 1886; and lastly Barnes' No. 10872 from Kluang Terbang at 5,000 ft. on Gunong Benom, Pahang, with buds.

Maisak is the Siamese name for this tree, and it is a Resak to the Malays. Resak laru is a name from Kuantan and also from Penang.

Our conclusion is that *Pachynocarpus* stands with two or possibly three species, i.e. *P. umbonatus*, Hook. f., possibly *P. verrucosus*, Burck, and *P. Stapfianus*, King; but that *P. umbonatus* must be collected again to remove some doubt as to the correct identification of the flowering specimens with the fruit. The rest of the species put by various authors into the genus go to *Vatica.*

Notes on Dipterocarps.

No. 7. On the fruit and germination of *Isoptera borneensis.*

By I. H. Burkill.

Isoptera borneensis, Scheff., is a tree which yields much of the Tangkawang fat produced in Malaya. Borneo, where its extension is through the island, is the centre of its distribution: eastwards it reaches Mindanao and westwards the Malay Peninsula, Bangka and south Sumatra. It is a large, but apparently not a very large tree. Its habitat is the margins of rivers of moderate size. Into their waters it drops is fruits, and they are distributed by them.

The following is a figure of the fruit in the position in which it floats, the buoyant sepals upwards.

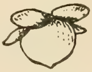


Fig. 1. A seed of *Isoptera borneensis,* in the position in which it floats. ½ nat. size.

Deprived of the corky sepals, the fruits within 60 hours, sink however dry at the starting of the experiment.

In Note no. 4 of this series (Journ. Straits branch Roy. As. Soc. no. 81, 1920, p. 75) an account was given of the floating fruit of *Vatica Wallichii,* Dyer (Pachynocarpus Wallichii, *King*) wherein the buoyant tissue is the fruit-wall, i.e. the same end is attained but by different means.

It is not possible to regard water-distribution as in any way ancestral in the order; but it appears in *Vatica* as an ultimate modification at the end of a series which has lost the advantage of height and thereby lost the wind that does not reach a small tree deep in high forest: and it would seem to be connected with fruiting before the tree is of any great height in *Isoptera borneensis;* for the tree commences to fruit at the early age of six years (fide van Romburgh and Ridley). But though *Vatica Wallichii* and *Isoptera borneensis* use water as a means for the distributing of their seeds they have little else in common, being wide apart in their order.

The embryo of *Isoptera borneensis* is very like that of some Shoreas, say of *S. costata,* in being grooved down the sides and in end-view, as figured here; but both its cotyledons reach the apex of the fruit-cavity, though the outer is so much the larger that it possesses anything from 240 to 280 degrees of the circumference at the equator of the seed.

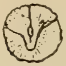
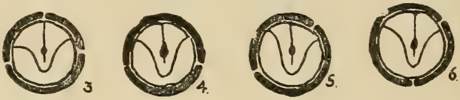


Fig. 2. Embryo of *Isoptera borneensis* seen from the end showing the outer cotyledon folded over the placentar cotyledon. ½ nat. size.

The vitality of the seed is not great. The fruit floats and germinates floating if the purpose of floating has not been achieved by a stranding in some new spot. Probably the end of germinated floating fruits arrives very quickly and the seedling perishes: it is heavier than water, and falling from the fruit sinks.

In germination the fruit-wall ruptures at no constant place, but in response to the pressure of the variable young plant within and not at any weak lines in the wall. Here are four diagrams showing the cotyledons in transverse section: the outer cotyledon in germination has a tendency to flatten itself, which tendency pushes chiefly right and left, and is fortified by a similar tendency in the inner or placentar cotyledon; this results further in a second direction of pressure,—towards the part of the wall where the placenta is, i.e. upwards in the diagrams. Under these pressures the wall gives way, first as a rule on the right and on the left, and either later near the placenta, or (diagram 4) not at all. The commonest form of splitting is that in diagram 3, the third, last and often not extensive, crack being close against one side of the attachment of the placenta to the wall.



Figs. 3—6. Diagrams of the position of the cracking of the fruit-wall in the germination of the seed of *Isoptera borneensis*. No. 3 is the most usual way. No. 4 is not uncommon being No. 3 as it were incomplete; No. 5 is No. 4 oblique,; No. 6 is the reverse of No. 3.

In diagram 5 is a case where the lobes of the placentar cotyledon were unequal and the splitting unusually oblique.

If the fruit is split into two, as in diagram 4, the two parts are nearly halves. Here are approximate measurement in degrees of a circle of six fruits split into two:—

173° 187°	placenta attached about the middle of the smaller part.
180° 180°	placenta attached about the middle of one of the parts.
189° 171°	placenta attached about the middle of the larger part.

201°
159° placenta attached about the middle of the larger part.

187°
173° do.

180°
180° placenta attached at 45° from the centre of one half.

When the fruit wall is split into three parts after the manner of diagram 3, ascertained measurements were

120° ⅄ 136° 84°	124° ⅄ 112° 124°	125° ⅄ 110° 125°
138° ⅄ 84° 138°	162° ⅄ 93° 105°	131° ⅄ 120° 109°

It is easy to understand what happens in these seeds from these few measurements. Take the diagrams, which have purposely been oriented for the sake of this explanation; the pressure of the embryo is greater transversely than in any other direction and results in the giving way of the fruit-wall at either side: if the giving way occurs at points more or less diametrically opposite, the pressure needs no further cracking: but if the first cracks appear rather to the lower side of the diagrams, then the embryo continuing to grow produces a new crack more or less mid way upon the larger part, that is generally in the neighbourhood of the attachment of the placenta. If as in diagram 6 the crack is too much to the upper side then a third crack must appear upon the lower or larger part to allow of the germination proceeding. I measured only two fruits of this type and I found them:—

106 127 Y 127	97 146 Y 117

This method of fruit-splitting, easy to demonstrate in *Isotoma borneensis,* is characteristic of the greater part of the order. It is not dehiscence, for the product of fertilisation in the order never ceases growing from the moment of fertilisation to the time when the produced plant dies: the embryo grows into the seed and devours its albumen, which done it is normally cast from the parent tree, not quiescent as so many seeds are, but still growing, and in the course of its growth it ruptures the fruit-wall as described. Under abnormal conditions it may not be cast from the parent tree, and then germinates suspended (van Romburgh).

If only we knew the workings of the process by which the tree cuts off nutriment from its offspring, we should know the strength of the barrier preventing vivipary from being anything but a phenomenon exhibited by few and peculiar Phanerogams.

As far as is known, it is universal for the Dipterocarps to possess in the ovary three chambers and six ovules, two in each: one ovule only in all normal cases matures. One flower only, shall we say, in 10,000 matures fruit. It is remarkable then, that the production of the six ovules to each flower should be so constant, and it suggests an ancestry which had not winged fruits as so many modern Dipterocarps have, because six seeds carried away together on the wind would be too heavy a load for efficient wind-distribution and, settled together, would compete unprofitably. Wind-distribution appears, therefore, a less ancient phenomenon than their six ovules, but yet it is so general as to be characteristic of the order. It is easiest to consider it as co-aeval in the order with its separation from something more ancient, and to consider the absence of it to be subsequent or secondary. *Isotoma* has lost it,—has taken to water-distribution as an alternative. *Vatica Wallichii* has done the same. Some species of *Shorea* such as *S. Thiseltoni,* some of *Dryobalanops,* some of *Vatica,* the species of *Balanocarpus,* and the species of *Pachynocarpus* hold their own producing fruits very heavy for wind to lift them, and are distributed through small distances by being rolled or carried along the floor of the forest. They too have lost their wings. If we think of the evolution of the order as suggested it is of the greatest importance to understand that the splitting of the fruit-wall is not along definite lines, that is to say there is in it no sign of a pre-Dipterocarp dehiscent condition when six seeds might mature and need for the sake of efficiency that they be scattered singly.

Against this line of argument it has to be admitted that some species of the genus *Vatica* possess weak lines in the walls of their fruits where rupture occurs. The lines seem tertiary however, and are being studied.

The cotyledons of *Isotoma borneensis* contain chlorophyll in abundance before germination, and on germination are exposed to to the light and held, like the cotyledons of most species of *Shorea,* upon short petioles.

Notes on Dipterocarps.

No. 8. On some large-fruited species, and in particular upon the effects of the pressure of the embryo against the interior of the fruit-wall.

By I. H. Burkill.

Dipterocarps with large fruits that are not wind-distributed occur in the genera *Dryobalanops, Shorea, Balanocarpus, Vatica, Pachynocarpus* and *Vateria.* By the kindness of Dr. F. W. Foxworthy, I have had material of some of them for study, and one *Balanocarpus maximus,* King, was the subject of Note no. 5 of this series (Jour. Str. Br. Roy. As. Soc. no. 81, 1920, p. 3). I am adding in this note observations upon *Shorea Thiseltoni*, King, and *Vatica Ridleyana,* Brandis, and also a few remarks upon a *Dryobalanops* which has the Malay name of " Koladan."

The weight of a fruit of *Shorea Thiseltoni* from the Weld Hill Forest Reserve, Kuala Kumpur, is found to be about 5.5 grammes; that of *Vatica Ridleyana* from tree no. 815 in the Botanic Gardens, Singapore, about 12.5 grammes. Neither is wind-distributed; but falls to the floor of the forest where it may be carried through small distances by rolling or by animals.

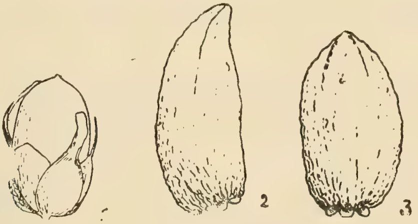


Fig. 1, a fruit of *Shorea Thiseltoni*; figs. 2 and 3, fruits of *Vatica Ridleyana.* All ½ nat. size.

Shorea Thiseltoni is one of a small number of species in the genus whose seeds contain oil as well as starch. That having been noticed, an analysis was requested from the Department of Agriculture, Federated Malay States and Straits Settlements, and kindly made through the good offices of Mr. L. Lewton-Brain by Mr. R. O. Bishop. The following is his report on seeds submitted to him from the Weld Hill Forest Reserve. " A certain number of the kernels were found to be mouldy and were excluded: the remainder were sampled and dried. The dry kernels were extracted for oil-content. The residue from oil extraction was examined for albuminoids and ash. Results:—

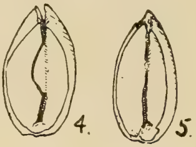
Kernel.	Moisture ..	.. 34.8 per cent	
	Oil	..19.5	(29.9 on dry kernel)
	Nitrogen ..	..0.72	(4.5 albuminoids)
	Ash	.. 1.56	

Dry residue after oil extraction

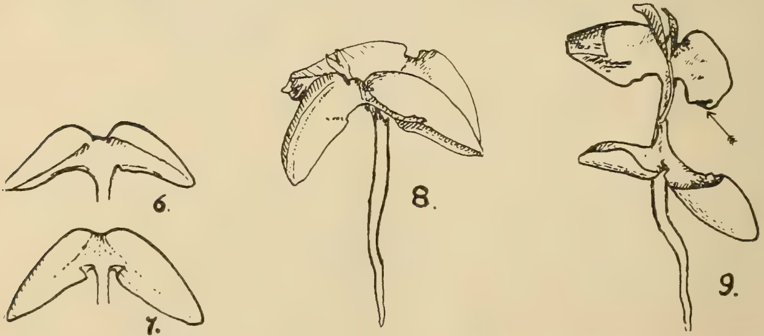
Nitrogen	1.33 per cent	(8.3 per cent albuminoid)
Ash	2.87	
Organic and volatile	97.13	

The oil immediately after extraction was liquid and with a green colour. It solidified on standing overnight and had the appearance of a tallow with a distinct odour of cocoa butter. The fat was found to have a very low acid value, the actual figure being 0.83."

The embryo has its cotyledons slightly unequal as in the following drawings where two are seen from the placentar side: the outer cotyledon is seen to be by a little the larger and alone to reach the very apex of the fruit-cavity. Great irregularity was found in the embryo: for instance in figure 4 one lobe of the placentar cotyledon is crossed partially to the wrong side of the dissepiment, and in figure 9 the two cotyledons are seen to be uneven. Normal expanded cotyledons are as in figures 6 and 7: in outline they are quite typical of the genus *Shorea*. Figures 8 and 9 represent the seedling, figure 8 a normal individual,—but



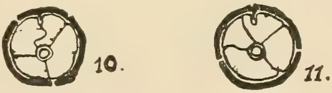
Figures 4 and 5. Two embryos of *Shorea Thiseltoni* removed from the seed coats. No. 4 is slightly abnormal in that one or the lobes of the placentar cotyledon has trespassed upon the room of the other lobe. ½ nat. size.



Figures 6 and 7, the expanded cotyledons of a seedling, No. 6 is the placentar cotyledon seen from the side towards the outer cotyledon; fig. 7 is the outer cotyledon from outside. Figures 8 and 9 two seedlings, the latter abnormal as a result of injury (? insect-puncture) at the point of the arrow. All ½ nat. size.

figure 9 one in which a lobe of the outer cotyledon has suffered injury (the arrow indicates the place), and its arrested growth has given the other lobe and the lobe of the placentar cotyledon in contact an opportunity for expansion beyond the normal. That this should happen is indicative of the pressure set up within the fruit,—the pressure which continued is also the cause of the rupture of the fruit-wall in germination, however at that period with a small amount of altered tension, due to the outer layer of the fruit wall contracting in drying somewhat more than the inner.

In my study of germinating Dipterocarps I have found no exactly similar case of a tendency in the ruptured fruit to gape and therefore it must be described in detail. The lines of rupture are variable in place, as in *Isotoma* (vide this Journal above) and are quite clearly brought about by the pressure of the growing embryo; but when they have been produced, the drying of the outer layer of the fruit-wall continues the tearing and causes the split wall to assume the appearance which is represented in figures 12, 13 and 14. This is not a hygroscopic action; and therefore no soaking of the seed brings the edges of the gaping crack together. Obviously it greatly facilitates the escape of the young plant from the imprisoning fruit-wall.



Figures 10 and 11, sections through the fruit of *Shorea Thiseltoni*, showing the packing of the cotyledon-lobes, and the places where in these cases the fruit-wall was split.

The fruit of *Shorea Thiseltoni* germinates without resting, and in germination the lines of splitting commence at the apex of the fruit, and extend downwards. The most usual course of events is for there to be three splits, and for two of them to extend to the base, whereon a panel of the fruit-wall is free and forced out. This panel is usually rather less than one third of the circumference: but there is great variability. The variability is accompanied by a great variability in the relative size of the lobes of the two cotyledons; and may be considered as a consequence of it, as has been suggested in the note upon *Isotoma borneensis;* and the most unusual forms of splitting were found to occur with unusual twisting or unequal development in the cotyledons.

The fruits sink in water, and may germinate submerged;* doubtless if such should happen in nature germination would be followed very quickly by death. An experiment was made with six fruits in order to see if submergence inhibited the splitting of the fruit wall: apparently it did not; for all the six germinated in six days under water. The splitting is the work of the germinating young plant pushing itself free.

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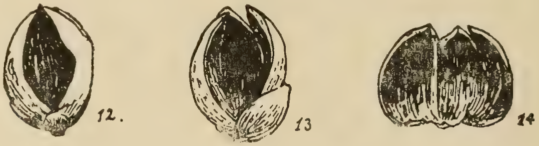
* Lewkowitsch, (Chemical technology and analysis of Oils, Fats and Waxes, ii, London, 1914, p. 601) has a statement that submersion of the fruits of Dipterocarps is resorted to in Borneo in the preparation of Tangkawang oil because it prevents germination. This reason appears wholly incorrect: but submersion by killing the caterpillars and grubs which so freely devour the embryo within the fruits may prevent loss in manufacture.



Figures 12, 13 and 14. Three empty fruits showing various degrees of gaping.

The petioles of the cotyledons elongate in germination so much as to attain 2-7 cm. pushing the radicle out to the soil before they free themselves from the fruit-wall. They possess abundant chlorophyll.

Leaving *Shorea Thiseltoni*, attention will now be directed to *Vatica Ridleyana*, Brandis.

This species grows wild in the Botanic Gardens, Singapore. It flowered in January, 1921, and bore ripe fruits from near the end of the year into the first quarter of 1922;—flowering had lasted a couple of weeks, but fruit-fall lasted three months. The considerable weight of the fruits has already been remarked: it remains to call attention to the circumstance that their growth from flowering to maturity takes twice as long as that of the smaller and closely allied *V. Wallichii.*

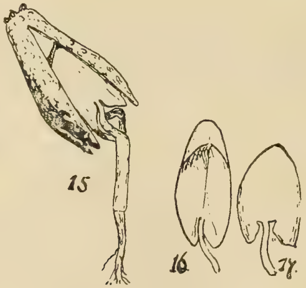


Figure 15. A seedling of *Vatica Ridleyana* in germination, the stalks of the cotyledons pushing the plantlet into the soil. The outer cotyledon is towards the observer; above it a little of the placentar cotyledon is visible. Figure 16, the placentar cotyledon from the surface in contact with the outer cotyledon. Figure 17, the outer cotyledon from outside. All ½ nat. size.

The placentar cotyledon is the larger and fills the lower part of the fruit-cavity to the exclusion of the outer cotyledon; but it shares equally the upper part of the cavity. The result is that its bulk is nearly twice that of the outer cotyledon. In *Balanocar-*

pus maximus the placentar cotyledon occupies the basal part of the cavity of the fruit and the outer cotyledon the apical; and they are of nearly equal bulk: in *Vatica Wallichii,* they are also of nearly equal bulk and they share the fruit-cavity equally, but side by side instead of as in *Balanocarpus* the one above the other: but in *Vatica Ridleyana* with inequality, the placentar cotyledon occupies the basal and shares the apical part.

There is enwraping neither in *Vatica Ridleyana* nor in *Vatica Wallichii;* and the cells in both are gorged with starch. The young plant after emergence is singularly similar in the two, the leaves are exactly alike, even to the 6-8 large glands upon the lower surface at the looping of the veins, surrounded by the richest green of chlorophyll. Unlike the fruits of *Vatica Wallichii,* the fruits of *Vatica Ridleyana* do not float in water, not even if dried.

In germination the fibrous fruit-wall splits from the apex downwards along pre-determined lines, possibly along one line to its base and for a short way only along others: the radicle is thrust out by the elongation of the petioles of the cotyledons, as in *Vatica Wallichii, Shorea robusta,* the genus *Dipterocarpus.* The blades of the cotyledons never leave the fruit-cavity, but develop a little,—very little—chlorophyll where they become exposed to the light.

The lines where the fruit-wall is split in germination, can be seen beforehand upon the outer side of the fruit, as they are depressed and free from the elsewhere abundant lenticels. The fruit-wall is thinner at them and the cell-structure differs.

These lines are usually three, but may be four and may be five in number. In studying the flower when it was available in January, 1921, (see this Journal p. 276), five-locular ovaries were not observed; but as their presence was not suspected, no search was made for them: it was only when, twelve months later, the fruit was ripe that their existence was suggested by finding five lines of splitting in a small percentage of the fruits.

Out of 263 fruits, 201 had three lines, 57 had four lines, and 5 had five lines.

It is most interesting that when the fruit shows four depressed lines upon the outside, three only as a rule are burst open, so that out of 17 fruits with four lines, set to germinate together, 15 were split along three and 2 only along four lines. Of the first fifteen in 13 the line which was not split was that close to the placenta.

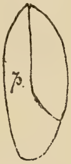
Four fruits with five depressed lines, set to germinate at the same time likewise became split along three only of the lines, and again a line not split was that closest to the placenta.

That these lines are the places where the carpels are connate into the ovary admits of doubt because in fruits with four lines, the placenta is rarely central upon any one of the valves. The development must be followed out to demonstrate that it is as one would expect. The fruit-wall is composed of brown parenchymatous cells, white sclerenchyma fibres and a margin of cork with numerous powdery lenticels.

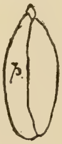
The sclerenchyma fibres are in bundles of 8-30 and anastomose; but not across the lines where the fruit-wall is ruptured. In their absence at these spots lies the weakness which associated with a slightly lesser thickness, locates the rupture of the dead tissues under the pressure of the growing seedling within.

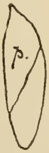
A comparative study of the distribution of these sclerenchyma fibres in the fruit-wall of the Dipterocarps, and above all of their relationship to the way in which the young plant makes it way out, seems to be most desirable; but it will be a long time before sufficient material for it can be got together.

Before the fruit-wall gives way, the growing embryo has endured a period of compression: and if the distribution of the pressure is made abnormal, it stows itself in a modified way. Insect-punctures and other forms of injury to the fruit-wall change this pressure: and a slightly greater resistance to being pushed against the wall in the placentae of the tree 815 appears to be the force which leads to so many of that tree's fruits curving as in figure 2 above. In these curved fruits the placenta is along the less convex side, and the dorsal cotyledon almost always just excludes the placentar from the apex of the fruit cavity. In a more or less straight fruit the embryo in side view is thus:—



both cotyledons reaching the apex, but the placentar alone the base. But with the pressure abnormal and particularly if the injury has passed through the fruit wall reaching the embryo as for instance a Hemipteron's tongue is generally meant to do, various changes affecting sometimes one side, sometimes another side of the embryo, appear; the embryo may then be unilateral or the dorsal cotyledon may have lost position or the placentar coyledon as in the two further diagrams here following. In the one the placentar cotyledon seems to have sustained a set back; and in the other the

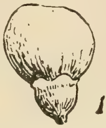




dorsal, the results of which have been in the one to produce an embryo closely similar to that of *Vatica Wallichii* (see Jour. Str. Br. Roy. As. Soc. no. 81, p. 76, figures 209-212), and in the other an embryo suggesting somewhat that of *Balanocarpus maximus* (see p. 4 of the same).

The lesson to which these observations seems to point, is that the embryo of Dipterocarps possesses a considerable amount of plasticity.

This note closes with a few remarks upon the Malayan *Dryobalanops* known as “Koladan,”* a member of its genus which uses the wind in no way for the transport of its fruits. They are as here drawn, and in germination the wall is split along three lines in exactly the same way as in *Dryobalanops aromatica.* The embryo is further as in that species (vide No. 4, Jour. Straits Branch Roy. As. Soc., No. 81, 1920, p. 56) and so also is the young seedling. It was not remarked of that species; but may now be remarked after studing *Koladan* somewhat, that the seedling has a great tendency to force rupture along two lines and to come to the light by pushing aside a panel of the wall which is diametrically opposite to the placenta.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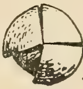
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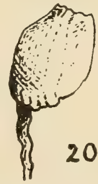
Figure 18. A fruit of Koladan, showing an obliquity by no means uncommon, the placentar side being smaller than the other. Figure 19 the same seen from the end showing which of the cracks usually it forced open the most: the placenta is uppermost.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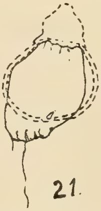
21.

Figure 20. A seedling of ‘‘Koladan’’ in the position in which is throws off its seedcoats and the fruit wall.

Figure 21 shows the fruit wall in broken dotted lines imposed over an outline of a seedling in germination to indicate where the greatest pressure appears to occur.

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* Dryobalanops sp.—Koladan, Foxworthy in Malayan Science Bulletin, vol. I, 1921, p. 76.

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New and Rare Malayan Plants.

SERIES XII.

BY H. N. RIDLEY.

The forest of the Malay Peninsula still continues to supply to the botanist many new and interesting species; and it will doubtless be many years before it becomes difficult to add to the list of our flora. The following additions continue the series published in the Journal of the Straits Branch of the Royal Asiatic Society. Some of them are of plants collected by myself in Selangor, and in a short but productive excursion to Bukit Tangga in Negri Sembilan in December 1920, and to the Semangkok Pass in January 1921. Others were collected by Mr. H. C. Robinson, C. B. Kloss and Mr. Seimund in various parts of the Peninsula.

The Bukit Tangga locality is 14 miles from Seremban where there is a small rest house situated at the top of the pass to Jelebu. The hill behind the bungalow rises to about 2,400 feet elevation and is densely afforested to the top. Although generally speaking this area has a flora closely resembling that of the Selangor hills, it contained quite a number of novelties which are certainly absent from Selangor. Many years ago Mr. Cantley had a collector in this district and it was probably near here that he obtained a number of plants never since collected.

POLYGALACEAE.

Polygala (Chamaebuxus) pulchra, Hassk. Flor. XXV. 142. Beibl. 32.

A slender woody shrub about 4 feet tall. Leaves membranous thin, oblong-lanceolate; nerves slender, 9 pairs; 8 in. long, 3 in. wide; petiole .25 in. long. Racemes short, about 1 in. long, pendulous. Sepals 2, outer ones short, one saccate ovate acute, the other smaller ovate, green petaloid. Sepals ovate round, .25 in. long. Petals 2, short, oblong blunt; keel 4-lobed, fleshy, not crested. All white tinted yellow. Capsule obovoid orbicular, deeply retuse, not winged except at the tip, green tipped purple or nearly all purple violet, .2 in. long, .3 in. wide. Seed subglobose, aril scarlet.

Hab. In hill woods, Negri Sembilan, Bukit Tangga, *Ridley.* Selangor, Ginting Bidai, *Ridley.* Also in Java and Sumatra.

This species is quite distinct, especially in life, from *P. venenosa* in its slender woody stem, its thinner leaves, short racemes not elongating to 5 inches long or more, the smaller flowers with small obovate rounded petaloid sepals and the smaller capsule not winged along the sides. It is not so striking a plant as the great succulent *P. venenosa* so common and conspicuous in our forests, nor are the flowers so brightly coloured in spite of its name.

MELIACEAE.

Turraea breviflora Ridley, n. sp.

A glabrous shrub. Leaves thin membranous, alternate, lanceolate acuminate cuspidate, narrowed and cuneate at the base, nerves about 10 pairs distinct beneath; 6.5 in. long, 2 in. wide; petiole .3 in. long. Flowers 3 or 4 on a very short .1 in. long axillary pubescent raceme, green; pedicels very short. Bracts minute ovate. Sepals connate at base with 5 short acute points. Petals 5, linear blunt, .25 in. long. Stamen-tube stout cylindric, shorter than petals with rather long filaments alternating with the anthers from the top of the tube; anthers elliptic 10, sessile with a long terminal process. Disc short and thin, lining the base of the tube. Style rather stout, hairy. Stigma capitate. Ovary conic hairy.

Hab. In woods; not common. Singapore, Serangoon, *Ridley* 9114; Selangor, Ulu Selangor, *Goodenough* 10612; Kanching, on limestone rocks, *Ridley.*

This species is very unlike the others of the genus in its very short green flowers, but there are a few in Africa which resemble it to some extent. The fruit has not been collected and till it is known it would be better to leave this plant in the genus *Turroea* to which at least it is nearest.

RHAMNACEAE.

Zizyphus pernettyoides Ridley, n. sp.

A spiny creeper with slender stems covered with scattered brown hairs. Leaves ovate acuminate, base round obscurely crenulate, coriaceous sparsely hairy on the edge, nerves 3, prominent and reticulations conspicuous when dry; .5 in. long, .25 in wide; petiole very short hairy, spines straight slender .25 in. long. Flowers .1 in. wide, greenish yellow in axillary fascicles of three in upper axils; pedicels very short .1 in. long. Sepals 5, triangular ovate with a few long hairs at the tips. Petals 5, half as long, spoon-shaped, clawed with an elliptic blunt limb. Stamens 5, very slender wrapped in the petals. Disc fleshy filling the tube. Ovary sunk in the disc with 2 short stigmas.

Hab. Lankawi, Dayang Bunting, *Robinson* 6193. Creeper; flowers greenish yellow, December 7, 1916.

A remarkable little plant with the smallest leaves of any *Zizyphus* known to me.

MYRTACEAE.

Eugenia alata Ridley, n. sp.

Tree, glabrous; branches 4-angled and winged in the upper part with 4 low wings along the angles. Leaves thinly stiff coriaceous, elliptic acuminate cuspidate; nerves 14 pairs prominent beneath, secondaries nearly as prominent, intramarginal nerve .1 in. from the edge, midrib prominent beneath; 6 to 8 in. long, 2.5 to 5 in. wide; petiole thick, grooved, above. Corymb compound, cymes 4 in. long and wide. Flowers numerous, congested at the branch ends; branches flattened, 4-angled. Calyx and pedicel club-shaped .2 in. long. Corolla small calyptrate. Stamens short and rather few.

Hab. Selangor, Semangkok Pass, track to Bukit Tegala, *Ridley.*

The flowers were in young condition and may perhaps when fully developed be larger. In one tree the inflorescence bore numerous bodies like round flattened lobed fruits; these proved to be flowers aborted by a number of galls in the ovary. The petals appear to be completely joined together so that it belongs to the calyptrate section, the curiously angled and winged branches and inflorescence branches is different from any other species I have seen.

ARALIACEAE.

Trevesia rufo-setosa Ridley n. sp.

A shrub with the habit of *Trevesia sundaica* Miq. Leaf palmate of seven lobes, base cordate, lobes more or less elliptic shortly cuspidate, edges undulate with short upcurved thorns, above glabrous except the nerves, and centre red-hairy and covered with small raised dots apparently hair bases; nerves 9, two on the lowest lobes, whole about 12 inches long and wide, the lobes cut down for 9 inches, and 3 to 4 inches wide, the lowest pair dilate on the lower edge at the base; petiole stout at the base and narrower upwards, 2 feet long, densely covered with red brown bristly hairs nearly .2 in. long. Inflorescence 8 in. long, flexuous, stout with a few short branches densely covered with similar hairs. Flowers unisexual on the same inflorescence .25 in. across with pedicels .4 in. long in umbels subsessile on the branches. Bracts linear acuminate caudate, very narrow .5 in. long. Calyx obconic densely red hairy; limb very short and obscure, lobed. Corolla stellate, spreading, lobes 5, triangular hairy beneath, coriaceous. Stamens 5, glabrous; filaments thick at base as long as the corolla; anthers large ovate cordate. Style in female flowers rather tall cylindric; stigma bifid with two short lobed oblong arms recurved. Ovary 5-celled.

Hab. Hill forests. Selangor, Semangkok Pass at 2500 feet alt., *Ridley.*

Nearest to *T. Beccarii* Boerlage, of Sumatra; but the dense indumentum of red brown hairs flattened at the base and acuminate covering the petiole and the whole of the inflorescence except the inner face of the petals, stamens, style and disc, is very distinct. The few stamens, 5 only, is also unusual.

RUBIACEAE.

Tarenna calcarea Ridley, n. sp.

A shrub with white shining branches. Leaves membranous ovate cuspidate with a long point drying black; base cuneate; nerves 4 to 5 pairs; 4 to 5 in. long, 2 to 3 inches wide; petiole 1 in. long, slender. Stipules short, broad, triangular with short points. Cymes 1.5 inches long, terminal, lax, few-flowered; peduncles .25 inches long. Bracts short lanceolate acute. Calyx very small under .05 in. long, cup-shaped with 5 short acute points. Corolla-tube cylindric, rather thick, .12 inches long, lobes oblong, blunt nearly as long; anthers acuminate nearly as long as the sepals. A little white hair at the base of the corolla-lobes.

Hab. Limestone rocks. Perak, Ipoh, *Ridley.*

Its set of *Tarennas* are somewhat closely allied and this is nearest to *T. adangensis* Ridley, but the leaves are larger and thinner and the corolla rather small, the throat being only sparsely white hairy. Nearly all of the set are inhabitants of limestone rocks and each area of limestone seems to have a distinct species or variety.

Pavetta indica Linn.

This species was based mainly on a drawing of Rheede's Hortus Malabaricus v. p. 19, t. 20. and in the Flora of British India, nearly all the *Pavettas* with large corymbs are put underneath *Pavetta indica* as the species intended by Linnaeus or as varieties of it. It seems to me however, that there are a good many distinct species included in *Pavetta indica* Hook. fil., Flora of British India iii. p. 150.

I make out the following species.

Pavetta indica var. **canescens.** *P. canescens,* Wallich Cat. 6181, Singapore.

Bush; branches softly velvety hairy. Leaves thin, lanceolate narrowed to the base with the nerves and sometimes the whole leaf beneath softly thinly hairy 6 to 8 in. long, 1.75 to 3 in. wide; petiole 1 to 1.25 in. long. Corymbs 2 in. long, 3 in. wide on a peduncle 2 inches long or less, pubescent. Stipules ovate with a long terete point. Flowers white; pedicels slender .1 in. long, pubescent. Calyx very small, cup-shaped with very short points pubescent. Corolla-tube .5 in. long, slender, lobes oblong blunt, .1 in. long. Style .6 in long.

Hab. Singapore, *Wallich*; Kranji, *Ridley* 2880. Malacca, *Griffith.* Negri Sembilan, Johol. Selangor, Ginting Sempah, *Robinson and Kloss.* Perak, Gunong Hijau, *Mohamed Haniff and Mohamed Nur,* 2451, flowers shorter. Changkat Mentri, *Kloss* 6510, nearly quite glabrous.

Var. **typica.**

Similar but glabrous. Leaves smaller. Flowers shorter, corolla-tube much thicker.

Hab. Perlis, Chuping, *Ridley* 14991.

P. tomentosa Roxb. ex Smith in Rees Cyclop. XXVI. No. 2. *P. indica* var. *tomentosa* Hook. fil. Fl. Brit. Ind. iii. 150 (in part).

Shrub; stem, underside of leaves and inflorescence densely soft velvety tomentose. Leaves thickly membranous drying black, above sparsely hairy; midrib tomentose elliptic-lanceolate, 3 to 5 inches long, 1.5 to 1.75 in. wide; nerves 9 pairs not distinct above; petiole 1 inch long. Stipules ovate cuspidate, tomentose. Inflorescence on short lateral leafy branches and terminal, branches 3 inches long. Corymb 3 inches wide; pedicels rather slender, .25 in. long. Calyx small; limb short with 5 short acute points. All tomentose. Corolla-tube .12 to .25 in. long; lobes oblong, subacute .1 in. long or less. Fruit globose, .15 inches through when dry.

Hab. Singapore, Changi. Johor, Batu Pahat and Sedenak. Malacca, *Maingay, Griffith, Cuming* 2304; near the town of Malacca, *Ridley*.

Distrib. India.

P. graciliflora Wall. Cat. 6178. *P. petiolaris* Wall. Cat. 6186.

Glabrous shrub about 6 feet tall. Leaves thin, elliptic-lanceolate cuspidate acuminate, base long narrowed; nerves 8 pairs inarching well within the margin, 7 in. long, 2 inches wide; petiole slender .5 in. to 2 in. long. Stipules triangular blunt. Inflorescence borne on lateral branches, 6 to 8 inches long, base except for a pair of leaves usually smaller at the top. Corymbs many flowered, 3 to 4 in. wide, lax. Pedicels very slender, filiform .25 to .5 in. long. Calyx very small; limb cup-shaped with 5 minute points. Corolla pure white, tube slender, .75 in. long, lobes oblong blunt, narrow .12 in. long. Style .5 in. longer. Fruit globose pear-shaped, grey green to black, .25 in. through.

Hab. Common in forests; a very pretty shrub. Malacca, Chabau forests, *Griffith*. Negri Sembilan, Bukit Tangga at 2000 ft. alt., *Ridley*. Selangor, Menuang Gasing, *Kloss;* Sempang, *Ridley* 15663, a form with lanceolate leaves 4 in. long, .75 in. wide; Ginting Sempah, *Ridley*. Perak, Ulu Bubong, *Kunstler* 10202; Temengoh; Tapah. Penang, *Wallich and Maingay*. Kelantan, Chaning, *Ridley*. Kedah, Kedah Peak, *Robinson and Kloss* 6119.

This species was referred by King to var. *polyantha* Hook. fil., —a distinct Indian plant. Wallich had a specimen from Finlayson in flower, No. 6178, and one from Penang in fruit 6186, and did not recognise them as the same thing. The plant varies chiefly in the size of the leaves. A plant obtained by me in Kelantan has leaves nearly 12 in. long, and 3.75 in. wide, and the pedicels are much shorter than in the type.

P. pauciflora Ridley, n. sp.

A small glabrous tree. Leaves thin, elliptic lanceolate, long acuminate, acute, long narrowed to the base; nerves 6 pairs inarching; 4 to 6 in. long, .5 to 1.5 in. wide; petiole slender, .5 in. long. Stipules triangular, cuspidate. Corymb very lax, 1.5 in. long with three very slender branches one inch long bearing cymes of three or more flowers on filiform pedicels .5 in. long. Bracts at base of branches stipuliform rather large. Calyx-tube subglobose with 4 short lobes. Corolla white, tube very slender .5 in. long, lobes 4, oblong blunt, .2 in. long. Stamens as long; anthers linear twisted. Style projecting for .5 in. long. Stigma gradually clavate. Fruit globose crowned with the tubular calyx.

Hab. Dense forests on limestone rocks. Selangor, Batu Caves, Dec. 1920, *Ridley.*

Allied to *P. graciliflora* Wall. but differing in the lanceolate leaves with very much smaller cymes and fewer flowers, more slender and smaller, and anthers as long as the corolla-lobes.

Psychotria lanceolaria Ridley, n. sp.

Slender shrub, glabrous. Leaves lanceolate acuminate, long narrowed to the base, membranous; nerves 10 pairs, slender forming bold arches within the margin, 6 in. long, 2 in. wide; petiole very slender 1.5 in. long. Stipules ovate acuminate, .12 in. long. Cyme 1 in. wide and as long; peduncle .25 in. long; branches few and few flowered; bracts and branch bases large like the stipules. Flowers small on very short slender pedicels. Calyx cup-shaped with 4 short ovate acute points. Corolla .1 in. long, tube longer than calyx silky within, lobes as long as tube oblong blunt. Fruit .2 in. long, globose, very obscurely 4-ridged.

Hab. Selangor, Batu Caves, *Ridley.*

Near *P. minutiflora* Ridley and *rostrata* but the larger flowers and differently shaped calyx distinguishes it from the former and the narrow leaves and more condensed cyme from the latter.

Psychotrea atroviridis Ridley, n. sp.

Shrub 12 in. tall; stem hairy. Leaves oblanceolate-obovate, coriaceous glabrous; midrib prominent, nerves 11 pairs prominent on both sides, 7 in. long, 4.25 in. wide; petiole .5 in. long, thick. Stipules oblong. Cymes 3, terminal 1 in. across. Peduncle 2 in. long. All puberulous. Flowers many, white, very shortly pedicelled. Calyx cup-shaped with 5 short ovate blunt lobes. Corolla-tube as long, lobes oblong, blunt. Fruit ellipsoid slightly flattened with 12 ribs, .25 in long.

Hab. Negri Sembilan, top of Bukit Tangga, at 2500 ft. alt., *Ridley.*

Allied to *P. stipulacea* but quite dwarf, almost stemless, the leaves larger and the inflorescence puberulous.

Cephaelis melanocarpa Ridley, n. sp.

Shrubby plant 3 feet tall, glabrous. Leaves narrow oblanceolate acuminate cuspidate, long narrowed to the base; nerves 20 pairs, curved ascending, paler beneath; 8 in. long, 2 in. wide; petiole slender, 1.5 in. long. Stipules broad blunt oblong-ovate. Peduncles stout, white and fleshy in fruit, 2 to 3 in. long. Bracts lanceolate, keeled and cuspidate 1 in. long. Flowers not seen. Fruit black elliptic narrowed to the base, .25 in. long. Seed flattened, ellipsoid with both edges keeled and a central rib, making in fruit when dry 4 ribs.

Hab. Negri Sembilan, forests near the top of Bukit Tangga *Ridley.*

Dried specimens much resemble *C. singapurensis* Ridley but the lanceolate mucronate bracts distinguish it and in life the swollen white peduncle and black, not pale blue, fruits distinguish it readily.

Spermacoce Linn.

This genus was originally based on several species of small herbs from S. America and two Asiatic ones of which one, *Spermacoce hispida,* occurs in our area, but lately this latter with a number of other Asiatic species has been separated from the American ones under the name of *Borreria,* while the *Spermacoce sarmentosa* Bl. is separated under the name of *Diodia sarmentosa* Sw. It is not rare in the Malay Peninsula, and occurs also in Banca, Java and Sumatra, and also in S. America whence it has probably been introduced into Asia. *Diodia* differs from *Borreria* in the cocci of the fruit, not dehiscing on the inner face. Of *Borreria* we have the following species in the Malay Peninsula.

1. **Borreria latifolia** K. Schum. in Mart. Fl. Brazil., vi. 63.

This was the plant described by me by error as *Diodia sarmentosa* in Journ. Roy. As. Soc. S. Br. 73, p. 145. It first appeared in Singapore in 1915, and curiously no specimens have been seen from any other part of the Old World. It is a native of S. America.

2. **B. hispida** K. Schum. in Engl. Pflanzenfam. iv. 4, p. 144. *Spermacoce hispida* Linn. Sp. Pl. 102.

This is common all over the Peninsula and occurs in India and the Malay islands. It does not appear to have been met with in S. America and is the only species with pink flowers.

3. **B. laevicaulis** Ridley. *Bigelovia laevicaulis* Miq., Fl. Ind. Bat. ii. 335. *Spermacoce stricta* King, in Journ. As. Soc. Beng. p. 90, 189, not of Linnaeus.

Common in the Malay Peninsula and occurring in Bombay and Java.

4. **B. setidens** Ridley. *Bigelovia setidens* Miq., Fl. Ind. Bat. ii. 336.

Common all over the Malay Peninsula and occurring in Java.

5. **B. pilulifera** Ridley, n. sp.

Slender erect, branched herb with few branches 14 in. tall; stems angled, ciliate along the angles. Leaves elliptic-lanceolate, narrowed to the base, rather fleshy, glabrous, pale beneath; nerves 5 pairs, 1 in. long, .4 in. wide; petiole .1 in. long; 2 shorter leaves usually at the base of the heads. Stipules very short, with short bristle. Heads .25 in. through, numerous bristles between the flowers. Calyx glabrous bifid. Corolla very short, white. Capsule obovoid. Seed rather large ellipsoid, dark brown, very obscurely reticulate.

Hab. Roadsides, Selangor, Klang Gates, *Ridley.*

6. **B. parviceps** Ridley, n. sp.

Very slender erect herb, simple or with one or two branches; stems angled with low wings, glabrous, 18 in. tall. Leaves in simple pairs lanceolate acute and narrowed to the base sprinkled with white hairs above, paler and scabrid beneath, .5 in. long, .25 in. wide; nerves 3 pairs sparsely hairy beneath; no petiole. Stipules very short with very numerous setae. Heads .12 in. through; flowers small with fewer and shorter bristles than the last. Calyx glabrous, bifid. Corolla white, very short. Capsule smooth glabrous. Seeds ellipsoid, dark brown, smaller than the preceding and deeply pitted.

Hab. Roadsides, Negri Sembilan, Bukit Tangga Pass, *Ridley.*

MYRSINACEAE.

Embelia subcordata Ridley, n. sp.

Slender climber; branches covered with red brown glandular hairs. Leaves distichous, oblong-lanceolate, blunt base broad subcordate, chartaceous, densely gland-dotted beneath glabrous except the hairy midrib; nerves very faint, about 10 pairs, 1.5 in. long, .6 in. wide; petiole hairy very short under .1 in. long. Flowers minute in axillary fascicles of 2 to 5; pedicels puberulous, .025 in. long. Calyx-lobes 5, ovate blunt, glabrous with 8 red glands outside. Corolla twice as long, lobes ovate, blunt, glabrous except the ciliate tip. Anthers oblong ovoid with 4 warts on the back. Pistil glabrous.

Hab. Selangor, Semangkok Pass on the track to Fraser's hill, *Ridley.*

This species has the appearance of *E. pulchella* of Siam, but the flowers are much smaller and almost completely glabrous.

APOCYNACEAE.

Ervatamia pauciflora Ridley, n. sp.

Shrub about 8 feet tall; bark pale whitish. Leaves thin membranous elliptic, blunt cuspidate, base narrowed, 7 inches long, 3 in. wide; nerves 10 pairs; nervules invisible; petiole .75 in. long.

Cymes in upper axils; peduncle .25 in. long; pedicels .5 in. long. Flowers white, 2 to 3 in a cyme. Calyx-lobes separate half way down oblong blunt, edge ciliate, whole calyx .1 in. long. Corolla-tube cylindric .5 in. long, lobes linear blunt. Stamens small; anthers oblong not apiculate. Style very slender. Follicles oblong narrowed and acute at both ends falcate, 1.25 in. long, .5 in. thick.

Hab. Mountain forests, Selangor, Ginting Sempah, *Ridley.*

Var. **minor** Ridley.

Leaves 4 in. long, 1 in. wide with about 8 pairs of nerves; petiole .2 in. long. Peduncle .1 in. long; pedicels .2 in. long. Calyx .8 in. long. Corolla-tube .6 in. long; lobes linear blunt, .25 in. long.

Hab. Negri Sembilan, Bukit Tangga at 2400 ft. alt., *Ridley.*

Allied to *E. jasminiflora* Ridley, but the flowers are smaller with shorter corolla-tube and small stamens.

ASCLEPIADACEAE.

Hoya citrina Ridley, n. sp.

Stout, long, pendent plant. Leaves thick, fleshy stiffly coriaceous ovate, base broad, round, subcordate; nerves three conspicuous when dry with about 4 pairs of lateral nerves from the central nerve broken up into reticulations large and lax, 4 to 4.5 in. long, 3 in. wide; petiole very thick .75 in. long. Peduncles stout, 2.24 in. long; raceme thickened lengthening to over 1 in. long with very numerous close set broad bracts. Pedicels .6 in. long. Flowers 3 in. wide; sepals ovate blunt. Corolla-lobes triangular ovate acute, light yellow. Corona pinkish red, lower lobe long acute, lanceolate.

Hab. Limestone precipices, Selangor, Batu Caves, *Ridley.* Perak, Ulu Bubong on a tree in jungle, *Kunstler* 10316; Batu Kurau, *Scortechini* 1626.

The Perak plants were referred by King and Gamble to *H. parasitica* Wall. from which they differ in the ovate cordate leaves, with three distinct nerves from the central one of which rise about 4 pairs of lateral nerves quickly broken up into reticulations. The flowers are very similar in both species except in colour, these being yellow with a red corona; those of *H. parasitica* pinkish white with a white corona, the corolla-lobes in this species are also triangular acute, not cordate.

Cynanchum Seimundii Ridley, n. sp.

Herbaceous climber, glabrous except inflorescence. Leaves thin membranous, ovate acute, base cordate; nerves 6 pairs, 6 in. long 5 in. wide; petiole 3 in. long or smaller. Corymbs axillary; peduncle 1.5 in. long. Flowers about 20; pedicels .5 in. long puberulous. Calyx-lobes very short, rounded ovate. Corolla .25 in. across, tube very short, lobes valvate lanceolate acute, spotted at the tips.

Corona fleshy at base attached to the corolla above with lanceolate retuse lobes shorter than the stamens. Anthers square, truncate with 3 inflexed points. Pollinia pendulous oblong with a long slender pedicel.

Hab. Pahang, Kwala Tahan, *Seimund.*

LOGANIACEAE.

Gaertnera ovata Ridley, n. sp.

Woody shrublet. Leaves glabrous, broadly obovate, shortly cuspidate, base narrowed gradually; nerves 9 pairs prominent beneath, 9 in. long, 4 in. wide; petiole winged to the base, .25 in. long, stout. Stipules connate rather large with a broad lanceolate point. Peduncles below the leaves slender, 3 in. long with 2 branches and distant stipules forming a tube with the midribs prominent and ending in mucros as long as the tube, slender acute. Cymes small 1 in. long with about 6 short branches, the lowest under .5 in. long. Flowers sessile about 4 in a small head at the end of each branch. Calyx short, cup-shaped with very short points. Corolla .1 in. long, tube thick shorter than the lobes, the lobes oblong round at tip, white, hairy at mouth of tube.

Hab. Selangor, Semangkok Pass, *Ridley.*

Gaertnera rigida Ridley, n. sp.

Low shrub about 3 feet tall, quite glabrous. Leaves stiff, rigid drying grey, coriaceous, lanceolate acuminate, long narrowed to the base, smooth shining above with prominent midrib, beneath minutely papillose all over; nerves 8 or 9 pairs with the nervules and reticulations prominent beneath, 9 in. long, 3.5 inches wide; petiole 1.25 inches long flattened above and slightly winged to the base. Stipules .75 inches long, forming a tube split on lower face half way down and prolonged into a lanceolate bifid point above. Inflorescences borne on long lateral branches 9 inches long bare except for a pair of narrow lanceolate acuminate leaves 4 in. long, .75 inches wide at the top subtending the inflorescence. Cymes 1 in. long of 3 branches. Calyx-lobes very short. Flowers not seen. Fruit globose or double with one or two seeds .25 in. through.

Hab. Dense forest, Negri Sembilan, Bukit Tangga, base of hill, *Ridley.*

I was unable to find flowers of this species: in foliage it resembles *G. lanceolata* Ridl., but the inflorescence is very short.

CONVOLVULACEAE.

Ipomoea Pes-Caprae Roth.

I was surprised to find a considerable sized patch of this seashore plant on a track leading to a saw-pit at Bukit Tangga. It was flowering and fruiting well. I have seen it some way from the sea on a sandy bank on the railway near Kota Bharu in Kelantan, but never before as far from the sea shore as at Bukit Tangga, about 35 miles away. It is probable that a cart load of seasand containing seeds of this convolvulus had somehow been sent to this spot, and the seeds had germinated and grown on a sandy spot near the stream edge where I found it.

CYRTANDRACEAE.

Didissandra castaneaefolia Ridley, n. sp.

Stem 3 in. tall. Leaves oblong to lanceolate-oblong, base narrowed minutely unequally cordate, edge coarsely serrate, membranous glabrous above; nerves 15 pairs and midrib coarsely hairy beneath 5.5 to 7 in. long, 1.75 to 2 in. wide; petiole 1.75 to 3 in. long, coarsely hairy. Peduncles 4 in. long, coarsely hairy. Flowers in a terminal cyme of 3. Bracts linear-oblong, .12 in. long. Sepals lanceolate acuminate, blunt .3 in. long, .1 in. wide, hairy. Corolla .75 in. long sparsely short hairy, lobes small, limb .4 in. wide (when dry).

Hab. Pahang, Kwala Teku, *Seimund.*

I have no clue as to the colour of the flowers of this species which is most nearly allied to *D. glabrescens* Ridley, but it is much more hairy and has more and smaller flowers.

Didymocarpus castaneaefolia Ridley, n. sp.

Stem erect, woody over 4 in. long, .2 in. thick corky. Leaves chartaceous lanceolate elliptic subacute, base cuneate, edge closely serrate, glabrous above except the midrib and nerves in young leaves; nerves about 25 pairs parallel, sunk above inarching within the margin, 5 in. long, 2 in. wide; petiole .5 in. long, hairy. Scapes 7 in. long hairy, in upper axils with about 5 flowers, the lower pair distant from the terminal ones. Bracts narrow lanceolate linear, green hairy .4 in. long. Pedicels .25 in. long, purple hairy. Sepals lanceolate-acuminate .12 in. long. Corolla 1.5 in. long, tube cylindric at base gradually dilate upwards, limb .5 in. wide, lobes blunt rounded. Capsule 2.5 in. long, narrow, cylindric.

Hab. Mountains at 5,000 ft. Perak, Gunong Inas, *Yapp 438.*

Allied to *D. venusta* but the leaves more closely serrate and distinctly petioled.

Loxocarpus minimus Ridley, n. sp.

Small stemless herb. Leaves 2 or 3 ovate to oblong-lanceolate or oblanceolate, densely white silky all over, .5 to .75 in. long, .2 to .25 in. wide; petiole .5 in. long or less. Peduncle 1.5 in. long slender, silky bearing one to two flowers at the top. Pedicel .1 in. long. Bract small linear. Sepals lanceolate .10 in. long, silky. Corolla hardly longer campanulate, .2 in. long, light blue-violet, sub-regular, hairy outside. Style longer; stigma large, round. Capsule ovoid beaked, hardly longer than calyx, splitting on the upper edge. Seeds oblong acute, pitted reticulate, dark green.

Hab. On two damp rocks in the forests, Negri Sembilan, Bukit Tangga, *Ridley.*

This remarkable little plant differs from the typical Loxocarpi in the short regular corolla and ovoid capsule which however, dehisces normally on the upper edge.

Cyrtandra patula Ridley, n. sp.

A big spreading shrub about 6 feet tall, bark corky wrinkled transversely pale, below glabrous; young parts tomentose. Leaves opposite, chartaceous oblanceolate acute, base long-narrowed blunt, edge serrate, glabrous above; nerves slender 15 pairs and midrib hairy beneath; young leaves thickly tomentose, 11 to 12 inches long, 4 inches wide; petiole thick .25 to .5 in. long, when young densely tomentose eventually glabrous. Cyme .4 in. long with about 7 or 8 flowers, silky hairy. Bracts small, hairy. Pedicels .1 to .2 in. long. Calyx tubular with 5 very slender points silky hairy, .1 in. long, yellowish. Corolla .5 in. long, campanulate, lobes rounded hairy outside, dull white with brown mottling in the throat. Stamens white; anthers connivent. Fruit .5 in. long, slender cylindric, narrowed to the style.

Hab. Negri Sembilan, Bukit Tangga. In muddy streams in dense forest behind the Bungalow, *Ridley.*

Allied to *C. bataviensis* Clarke of Java.

ACANTHACEAE.

Ebermaiera longispica Ridley, n. sp.

Herb over 12 in. tall, quite glabrous. Leaves rather thin, broad lanceolate, narrowed to both ends; nerves 18 pairs parallel; 6 in. long, 2 in. wide; petiole slender, 2 inches long. Inflorescence racemose, racemes solitary axillary solitary or 2 to 4 in a panicle, with peduncle 3 inches long. Flowers numerous distant. Bracts ovate or oblong blunt foliaceous, petioled, .25 in. long and .12 in. wide. Pedicel .1 in. long. Sepals lanceolate acuminate. Corolla .75 in. long, tube narrow cylindric at base, .25 in. long, gradually dilate to limb, .5 in. long, dull pink outside, and within tube, limb lobes blunt, .1 in. long, white. Stamens 4, diadelphous, shorter than tube. Style included; stigma bifid. Capsule oblong .15 in. long.

Hab. Woods, Negri Sembilan, Bukit Tangga. Selangor, Ulu Gombak, *Ridley.*

The only plant this seems to be at all near is *E. Griffithiana* which has the same kind of broad oblong bracts.

Strobilanthes latebrosa Ridley, n. sp.

Big spreading shrub 8 feet tall, glabrous. Leaves chartaceous, ovate-lanceolate cuspidate blunt, base decurrent on petiole, edge undulate; nerves 10 pairs, secondary nerves almost as conspicuous; 9 in. long, 4 in. wide; petiole 1.5 in. long. Flower heads solitary or in threes axillary or on short lateral shoots, 1.25 in. long; peduncle .3 in. long. Bracts numerous, large leaflike, outer ones ovate 1 in. long, .5 in. wide, inner ones linear-lanceolate blunt, narrower, hairy, all green. Corolla 2 in. long, 1 in. across the limb, white, tube slender, cylindric at base .5 in. long, above abruptly dilated, urn-shaped, lobes short. round. Stamens enclosed in tube. Capsule .75 in. long subacute, not dilated at tip, 4-seeded. Seeds rounded ellipsoid.

Hab. Negri Sembilan, Bukit Tangga forests, *Ridley.*

Allied to a Javanese plant named *S. grandis,* Clarke in Herb. Kew, collected by Forbes.

Strobilanthes leucopogon Ridley, n. sp.

Shrubby branches angled glabrous. Leaves chartaceous, lanceolate acuminate narrowed to a blunt sub-truncate base, edge slightly undulate; nerves 7 pairs, elevate, transverse nervules few, sub-horizontal elevate beneath; 6 in. long, 2 in. wide; petiole under .1 in. long. Racemes in terminal axils, on branches .5 in. long with a pair of much reduced leaves at their bases 1.5 in. long, cylindric. Bracts ovate-oblong blunt, .15 in. long, .08 in. wide covered with long white spreading hairs, corolla-lobes narrow linear spathulate, white hairy, shorter than sepals. Corolla .75 in. long pure blue, tube at base slender then funnel-shaped; lobes subequal, mouth .4 in. across.

Hab. Kedah, Lankawi Islands, Dayong Bunting, *Robinson 6196*; flowers pure blue.

This is nearest to *S. niveus,* Craib.

Barleria siamensis Craib, var. **glabrescens** Ridley, n. var.

Plant much smaller in vegetative parts than the type, 12 in. tall, glabrescent. Leaves oblong acuminate rather abruptly, tip blunt, 3.5 in. long, 1.5 in. wide, glabrous above, roughly appressed hairy on nerves and nervules beneath; petiole roughly hairy. Flowers 2 in. long. Bracts ovate hairy on nerves but much more glabrous than in type.

Hab. Kedah, Lankawi Islands, Dayong Bunting, *Robinson,* Nov. 1916.

The type of this, *B. siamensis,* Craib in Kew Bull., 1911, p. 437, was collected at Doi Sutep at 2,300 to 2,500 feet. It attains the height of 5 feet, the leaves 8 in. long by 3 in. wide with a longer acuminate point and the whole plant is much more hairy. The Lankawi plant is dwarfer with smaller leaves, more glabrous.

Gymnostachyum Robinsonii Ridley, n. sp.

Stem shortly creeping, ascending, woody, 2 in. long. Leaves elliptic-ovate to round blunt, base shortly decurrent on the petiole, scabrid above and beneath; midrib above and beneath and 5 pairs of nerves scurfy pubescent 1.25 to 2.25 in. long, 1.1 to 1.75 in. wide; petiole flattened .5 to 1.25 in. long. Raceme 3 in. long, sometimes branched, pubescent, slender. Flowers solitary about 10 in the raceme. Bracts narrow linear pubescent .1 in. long. Calyx shorter, lobes linear acuminate with broader base, very narrow pubescent. Corolla .4 in. long, puberulous.

Hab. Kedah, Lankawi islands, Dayong Bunting, *Robinson*, Nov. 1916.

Allied to *G. diversifolium* but the flowers much smaller.

Eranthemum candidum Ridley, n. sp.

Glabrous simple, shrubby plant. Leaves lanceolate acuminate at both ends, membranous; nerves 8 pairs ascending, 5 to 6 in. long, 1.5 to 2 in. wide; petiole .75 in. long. Raceme 6 in. long; peduncle 6 to 9 in. long. Flowers distant, solitary or paired; pedicels .1 in. long; bracts lanceolate acuminate from a broad base shorter. Calyx puberulous; lobes linear acuminate, .1 in. long Corolla pure white, tube .5 in. long, base cylindric then about midway thickened upwards; lobes elliptic blunt .5 in. long, by .25 in. wide subequal. Stamens in the base of the dilate portion of the tube.

Hab. Forests by the stream at Ulu Gombak, Selangor, *Ridley.*

This is allied to *E. Kingianum* but has smaller corollas and pedicelled flowers.

Justicia Robinsonii Ridley, n. sp.

Shrubby, glabrous except inflorescence. Leaves chartaceous lanceolate acuminate, base cuneate; nerves 7 pairs, 7 to 10 in. long, 2 to 3 in. wide; petiole .5 in. long. Raceme solitary or paired terminal, subsessile 1 in. long; rachis pubescent. Bracts ovate acute sessile .2 in. long, acute puberulous. Flowers crowded, subsessile. Sepals 5, lanceolate linear acuminate, pubescent. Corolla .25 in. long, tube thick cylindric, little longer than sepals, dirty white spotted purple, upper limb shorter than lower limb, woody, blunt, lower 3-lobed, lobes rather broad blunt. Stamens 2; anther-cells not parallel, shortly prolonged below, slightly shorter than the corolla. Style very slender, filiform. Capsule .5 in. long, lower half fawn-colour pustulate, seeds strong retinacula.

Hab. Kedah, Lankawi islands, Dayong Bunting and Burau, *Robinson 6191.* Shrubby plant. Flowers dirty white spotted purple.

Justicia microcarpa Ridley, n. sp.

A thin, weak plant, glabrous. Leaves lanceolate ovate thin, very shortly bluntly narrowed to base; nerves 10 pairs 6 in. long, 2 in. wide; petiole 1.75 in. long. Racemes solitary axillary and terminal, 2 in. long. Flowers crowded, secund. Bracts lanceolate acuminate slightly shorter than the calyx. Sepals linear acuminate. Corolla .3 in. long, cream with pink spots in the mouth. Fruit .4 in. long. Seeds 4, ovoid, flat acute, pustular.

Hab. Selangor, Batu Caves, *Ridley.*

Allied to *J. uber* but smaller, weaker with differently coloured flowers and very small fruit with seeds of a different shape.

Sphinctacanthus malayanus Ridley, n. sp.

Shrub about 2 feet tall; stems pale fawn colour. Leaves membranous, lanceolate acuminate, base cuneate, glabrous above, sparingly short hairy beneath especially on the midrib; nerves 8 pairs ascending and inarching 6 to 8 in. long, 1.5 to 2.75 in. wide; petiole .5 in. long. Panicle racemiform, 7 in. long, with many short branches .5 in. long to .75 in. in fruit, all hairy; peduncle 3 to 4 in. long. Flowers white, 2 to 7 on a branch. Bracts very small lanceolate. Sepals free to base lanceolate subulate .08 in. long. Corolla .25 in. long, tube cylindric limb 2-lipped, upper lip oblong bilobed longer than the lower lip. Stamens 2 in the mouth of the tube; anthers elliptic; cells equal and parallel. Style as short. Fruit base solid, .25 in. long above ovoid acute, hairy. Seeds 4, round, flat, strongly pustular, pale.

Hab. Negri Sembilan, forests on Bukit Tangga, *Ridley.*

LORANTHACEAE.

Elytranthe tubaeflora Ridley, n. sp.

Stems stout, pale emitting long creeping and rooting suckers. Leaves stiffly coriaceous ovate to lanceolate-acute, base round; nerves about 6 pairs usually invisible; 3 to 3.5 in. long, 1.75 to 2.5 in. wide; petiole thick, .25 in. long. Raceme short, 1 in. long, about 8-flowered; pedicels .1 in. long. Bracts 3, lower one lanceolate, upper smaller, ovate acute, all shorter than corolla-tube. Corolla 3 in. long gradually dilate upwards, trumpet-shaped, .5 in. across at the mouth, lobes 6, narrow-linear lanceolate acute .75 in. long. Stamens 6, very narrow as long as corolla-lobes, anthers basifixed. Style longer; stigma ovoid.

Hab. Perak, Gunong Inas 5,500 at feet, *Yapp 501.*

URTICACEAE.

Ficus patens Ridley, n. sp.

Large spreading shrub; branches hairy with large pith. Leaves large ovate cordate, lobes at base round: nerves 3 from base, 2 outer with about 7 nervules running to the edge, midrib with 6 pairs of nerves almost opposite, tranverse nervules and reticulations prominent beneath, above sparsely scabrid hairy, nerves densely hairy, beneath shortly bristly hairy on nerves and reticulations, under-side paler than upper; 11 in. long, 9 in. wide; petiole hairy sheathing at base 3 in. long. Figs globose roughly hairy .5 in. through. Peduncle very short. Bracts 3, small ovate, connate hairy. Umbilicus short blunt. Bracts small. Female flowers stalked with 4 spathulate petals, dark purple when dry. Achene oblique round, stalked as long as petals; style long, slender lateral towards the top. Male flowers not seen.

Hab. Selangor, Ginting Sempah; Semangkok; near Kanching, Negri Sembilan, Bukit Tangga Pass, *Ridley.*

This plant is very common along the roads in low jungle in Selangor and Negri Sembilan at about 1 to 4,000 feet alt., but comparatively rarely produces figs. It is a very large spreading shrub with the lower parts of branches bare, about 20 feet tall. It is allied to *F. fulva* but has cordate leaves except in the young state and very different flowers.

Elatostemma inaequilobum Ridley, n. sp.

Herb; stem slender succulent, long creeping ascending to a foot tall, glabrous. Leaves alternate with no trace of the second one of the pair, thin inaequilaterally lanceolate long acuminate, base very unequally bilobed, larger lobe rounded, edge crenate, serrate in the upper half, trinerved the outer pair looped with the nervules joining them, 4.5 in. long, 1.5 in. wide or less; petiole .1 in. long or less. Female heads .12 in. through on slender filiform peduncles .2 in. long axillary. Flowers numerous shortly pedicelled. Sepals 3, very narrow linear caudate with a broader base. Achene ellipsoid, strongly tubercled. Male plants not seen.

Hab. Selangor, Ginting Sempah, *Ridley, Robinson and Kloss.* Tonkin, Rocks on edge of torrents, Mount Bausi, *Balansa 2562.*

This is a very distinct plant of which we have only females. The completely alternate leaves and small heads with very narrow sepals and slender peduncles are unlike those of any other species I have seen. The leaves in the Tonkin plant are much smaller than in the Selangor one, which with the long rhizome is over 2 feet long.

ORCHIDACEAE.

Thrixspermum iodochilus Ridley, n. sp.

Stem 4 in. long, 2 in. wide; sheaths strongly ribbed. Leaves coriaceous, oblong-linear, 3 to 5 in. long, .5 in. wide. Peduncle 2 in. long. Raceme flat 1.5 in. long or more. Bracts flat, boat-shaped. Flowers on pedicels slender .3 in. long. Sepals and petals triangular lanceolate at base with very slender tails, .75 in. long, ochre yellow, not spotted; spur short blunt, .12 in. long, pink. Lip violet, narrow, tongue-shaped .25 in. long.

Hab. Negri Sembilan, Bukit Tangga Pass, on trees, *Ridley.*

This has quite the habit of *T. arachnites,* but apart from the colouring of the flowers, the peculiar long slender lip distinguishes it clearly.

APOSTASIACEAE.

Neuwiedia ocrea Ridley, n. sp.

Stem below leaves 1.5 in. long. Leaves 7 or 8 elliptic, long acuminate, 10 in. long, 2.25 in. wide; petiole 4 in. long, strongly ribbed. Raceme 5 in. long. Bracts at base lanceolate acuminate .75 in. long above .5 in. long, terminal ones .2 in. long all but the lowest hairy and conspicuously nerved. Flowers about 40, buff colour, glandular hairy; pedicels hairy .1 in. long. Sepals and petals .5 in. long lanceolate with small caudicles at tip. Petals narrower than sepals, keeled; keel hairy. Stamens 3; anthers oblong; filaments free at the top below connate with the style. Style curved, stout, shorter than the stamen with a rather large stigma. Ovary ellipsoid narrowed at both ends, hairy.

Hab. Very rare, one plant only found on Bukit Tangga, Negri Sembilan at 2,000 feet.

Very distinct from all other species in its pubescence and buff-ochre flowers. Nearest to *N. Zollingeri.*

SCITAMINEAE.

Kaempferia cyanescens Ridley. *Elettariopsis cyanescens* Ridley in Jour. Straits Branch Roy. As. Soc. 41, p. 31.

Rhizome short, stout. Leafy stems 2 feet 3 in. tall, slender, glabrous. Leaves oblong-lanceolate, long acuminate thin, base gradually narrowed blunt, 6 in. long, 1.25 in. wide; petiole very short or none; ligule ovate blunt .12 in. long. Flowers appearing with the leaves in a basal tuft an inch long; peduncle .25 in. long. Bracts lower ones ovate, upper ones lanceolate, 5 in. long, reddish-white. Ovary .1 in. long pubescent. Calyx slender tubular, spathaceous split on one side more than half way down with 3 small points 1.5 in. long. Corolla-tube 2 in. long, slender, lobes lanceolate acute, thin, white, 1 in. long, .12 in. wide. Staminodes lanceolate-acute as long but broader, white. Lip large obovate rather long-clawed, bilobed, violet veined with white. Anther white hairy.

Hab. Negri Sembilan, Bukit Tangga. Common on the hill behind the bungalow to the top.

This plant was collected first by Mr. Napier who brought me a specimen, the flower of which was of poor condition and I put it down as *Eletariopsis.* Having now seen plenty in the same locality I see it is a *Kaempferia* and re-describe it.

Alpinia campanaria Ridley, n. sp.

Tall plant. Leaves oblong cuspidate acuminate, glabrous except the ciliate edge, 2 feet long, 5 in. wide narrowed to base;

petiole 4 in. long, glabrous, ligule oblong .4 in. long. Raceme stout pubescent velvety, 11 in. long; flowers distant; peduncles 1.25 in. long, stout velvety. Bracts lanceolate, the lowest 2.25 in. long, upper ones broad and short, .5 in. long, silky. Involucral bracts cupular-campanulate .4 in. long .5 in. wide, silky containing 4 round, silky bracts each with a single flower on short silky pedicel. Calyx campanulate, silky with obscure points, white .5 in. long and as wide. Ovary small, silky. Corolla silky, tube .5 in. long, lobes oblong blunt, buff with white knobs at the top, .6 in. long. Lip broad obovate convolute, 1.5 in. long, 2 in. wide when expanded, white with a yellow base, and red bars. Stamen filaments broad linear, anther yellow, oblong, no crest. Staminodes large, broad, rhomboid with acute points at base of filaments.

Hab. Negri Sembilan, Bukit Tangga, at 2,400 feet alt., *Ridley.*

This is distinctly allied to *A. javanica* which it somewhat resembles in the form of bracts and flowers, but the inflorescence is laxly racemose.

Alpinia Seimundii Ridley, n. sp.

Stem slender, sheaths and petiole pubescent. Leaves lanceolate acuminate with a long point, base narrowed unequal, midrib at back pubescent, 12 in. long, 2 in. wide; petiole .25 in. long, ligule oblong round silky. Panicle 5 in. long, pubescent with tufts of hairs below the branches; branches distant .5 in. long, usually 1-flowered. Bracts persistent broad, tubular with a rounded mouth silky .5 in. long. Calyx entire tubular dilate upwards with 3 small points, nearly .5 in. long silky. Corolla-tube slightly longer; lobes oblong blunt hairy .5 in. long. Lip obovate trilobed, .4 in. long and .3 in. wide, base narrowed, slender, lobes 2 rounded, median smaller bifid at tip with two slender points, 3 strong red nerves running to the tip of the midlobe and one shorter on each side. Staminodes very short obscure points at the base of the stamen. Stamen, filament rather slender; anther cells elliptic pointed below, hairy on the back.

Hab. Pahang, Kwala Teku, *Seimund.*

This has remarkably small flowers for the *Catimbium* section. It is apparently nearest to *A. multica.*

Amomum spiceum Ridley, n. sp.

Plant forming a very large tuft of leafy stems 6 feet tall. Leaves narrow linear oblong acuminate narrowed to base, 18 in. long, 1 in. wide; ligule oblong, tip round entire, adnate to petiole. Flower spikes at base, 8 in. long peduncle 1 in. long, velvety as is rachis. Bracts erect lanceolate acuminate, edges hairy, papery 3 in. long, .5 in. wide, uppermost 2 in. long. Spikelets about a dozen consisting of three papery bracts containing a solitary flower.

Calyx spathaceous split in front, 1.5 in. long, buff. Corolla-tube as short, upper lobe broad oblong, 1.5 in. long, blunt, lower ones linear, buff. Lip large obovate entire, yellow finely punctate red on both sides at the base. Stamen shorter than corolla-lobes; filament longer than anther. Anther oblong, crest of two recurved horns with a small central process. Ovary silky.

Hab. Negri Sembilan, Bukit Tangga, abundant at 2,000 feet alt., in thick forest, *Ridley.*

ARACEAE.

Amorphophallus elegans Ridley, n. sp.

Tuber small, flattened, globose, 3 in. through. Leaf, petiole slender mottled grey green, 1 to 2 feet tall, limb green, of 3 branches, outer pair rebranched; petiolules 3 inches long, leaflets 3 to 4 oblong, long cuspidate, base cuneate inaequilateral, nerves 11 pairs, secondary nerves nearly as conspicuous, all joining an intramarginal nerve, 6 in. long, 1.5 in. wide, cusp 1 in. long; secondary petiolules .12 in. long. Peduncle slender, 3 feet tall, mottled grey green, and pink with scattered light green blotches. Spathe narrow lanceolate acute, 5 in. long, pale green with small dark green blotches. Female portion of spike .5 in. long, green with yellow sessile stigmas. Male portion cylindric, 3 in. long. Stamens white; anther-cells pink. Appendage rugose cylindric, 4 in. long, white.

Hab. Mountain woods, Negri Sembilan, Bukit Tangga, *Ridley.*

Pothos lorispatha Ridley, n. sp.

Climber, stem slender woody, internodes 1 in. long. Leaf thinly subcoriaceous, inaequilateral lanceolate long-acuminate; nerves numerous inconspicuous intramarginal .5 in. from the edge, base narrowed; 12 in. long, 3 in. wide; petiole 1.5 to 3 in. long, narrowly winged to the top, knee obscure, base shortly sheathing. Peduncle slender 1.25 in. long. Spathe narrow, strap-shaped acuminate acute, 4 inches long, .4 in. wide, dark green. Spadix narrow cylindric, 3 in. long, .12 in. through; peduncle .25 in. long. Bracts bluntly triangular at top, strongly keeled beneath. Sepals small, blunt triangular, hooded. Stamens shorter. Ovary oblong subquadrate at top. Stigma small circular.

Hab. Limestone cliffs, Selangor, Batu Caves, *Ridley.*

The leaves are thinner in texture than in most species and the spathe is strap-shaped.

PALMAE.

Areca latiloba Ridley, n. sp.

Stem simple 4 to 5 feet tall, .5 in. through. Leaves three feet or more long with few broad sigmoid rhomboid lobes, broad at the base, very long acuminate at the tip with 10 to 12 prominent nerves 1 foot long, 3 in. wide, the top pair very unequal. Spadix 9 in. long; branches slender in pairs on short .2 in. peduncles below, solitary above. Male flowers .18 in. long. Sepals very small, round. Petals lanceolate acute. Stamens 3, filaments connate at the base. Female flowers one on each branch or only on the middle branches. Sepals ovate acute. Petals broad oblong blunt .4 in. long. Fruit 1 in. long, .5 in. through, thin, fibrous coat.

Hab. Mountain forests, Negri Sembilan, Bukit Tangga at 2,400 feet alt., *Ridley.*

This is distinguished from *Areca pumila* Bl. by its smaller size, more slender stem, and broad sigmoid leaflets, resembling those of *Pinanga canina.*

Pinanga glaucescens Ridley, n. sp.

A dwarf palm. Leaves 3 feet or more long, lobes very broad, oblong-lanceolate, long-acuminate with 6 to 12 prominent nerves, glaucous beneath 14 in. long, 3.5 in. wide, terminal pair connate at base for 6 inches, separate at top for 7 inches, with numerous terminal teeth, midrib spotted brown, young leaves maculate with darker spots. Spadix erect with two or three branches, stout peduncle 1.5 in. long; branches 4 in. long. Flowers spirally arranged. Sepals in female round, short. Fruit black on a red spadix ellipsoid, .5 in. long. Stigmas short sessile. Seed ellipsoid .4 in. long sparsely ruminate.

Hab. Mountain forests Negri Sembilan, Bukit Tangga at 2,400 feet alt., *Ridley.*

This species is near *P. Scortechinii;* but it is a shorter palm with much broader lobes to the leaves.

PANDANACEAE.

Pandanus pilaris Ridley, n. sp.

Short bushy plant. Leaves dark green 8 feet long, 1 in. wide, 3-nerved linear acuminate with numerous very small thorns on the edges and 3 nerves in the upper part. Peduncles stout 8 in. long, obscurely 3-angled at the top with a broad lanceolate bract over 6 in. long. Male unknown. Female head globose, 4 in. through. Ovaries cylindric angled, nearly 1 in. long, .18 in. through slightly curved, acute. Stigma linear on the underside running to the tip.

Hab. Mountain forests 2,000 feet alt., Negri Sembilan, Bukit Tangga, *Ridley.*

New or Noteworthy Bornean Plants

PART II.

BY ELMER D. MERRILL.

Director, Bureau of Science, Manila.

This account of Bornean plants is continued from page 201 of the Journal for this year, No. 85.

LEGUMINOSAE.

Derris Loureiro.

Derris pachycarpa sp. nov.

Frutex scandens, glaber (floribus ignotis); ramis lenticellatis; foliis 20—30 cm. longis, foliolis 7 vel 9, elliptico-ovatis vel oblongo-subcaudato-acuminatis, nervis utrinque circiter 10, tenuibus; infructescentiis 10—18 cm. longis; leguminibus brunneis, nitidis, laevibus, oblongis vel oblongo-ellipticis, inflatis, 4.5—7 cm. longis, 2.2—3.5 cm. latis, usque ad 1 cm. crassis, suturis superioribus anguste crasseque alatis vel carinatis, inferioribus rotundatis vel obscurissime carinatis; seminibus solitariis, oblongo-ellipsoideis vel oblongis, 2.5 cm. longis.

A scandent woody vine apparently glabrous (flowers unknown), the branches brown or reddish-brown, lenticellate, smooth or somewhat rugose, the branchlets somewhat angled or compressed when dry. Leaves 20 to 30 cm. long; leaflets 7 or 9, elliptic-ovate to oblong-elliptic, chartaceous, smooth, shining, brownish-olivaceous, the lower surface somewhat paler than the upper, 7 to 12 cm. long, 3 to 6 cm. wide, the apex conspicuously and rather abruptly acuminate, the acumen often subcaudate, blunt, up to 1.5 cm. long, base rounded; lateral nerves about 10 on each side of the midrib, slender, not prominent, the reticulations obscure; petiolules 7 to 9 mm. long. Infructescences 10 to 18 cm. long. Pods oblong to oblong-elliptic, inflated, brown, smooth, shining, 4.5 to 7 cm. long, 2.2 to 3.5 cm. wide, up to 1 cm. thick, the upper suture narrowly and very thickly winged or carinate, the lower one rounded or very obscurely carinate, the upper wing at most 3 mm. wide. Seeds solitary, oblong-ellipsoid or oblong, 2.5 cm. long.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1250* (type), *1257*, October, 1920. In thickets and in forests at low altitudes. A species well characterized by being entirely glabrous, so far as known, and in its inflated, obscurely winged, or sometimes merely carinate pods which very strongly resemble those of *Pongamia pinnata* Merr.

Canavalia Adanson.

Canavalia bracteolata sp. nov.

Suffruticosa, scandens, partibus junioribus et subtus foliis ferrugineo-pubescentibus; petiolis perspicue ferrugineo-pubescentibus; foliolis ovato-ellipticis vel ellipticis, membranaceis vel chartaceis, acuminatis, 7—9 cm. longis; racemis longe pedunculatis, floribus 3 cm. longis, glabris, bracteolis binis ellipticis membranceis 8—10 mm. longis instructis; leguminibus anguste oblongis, compressis, leviter pubescentibus, 12 cm. longis, 15—18 mm. latis, seminibus circiter 12, ellipticis, compressis, 8 mm. longis, atro-brunneis, obscure variegatis.

A suffrutescent vine, the younger parts and the lower surface of the leaflets conspicuously ferruginous-pubescent. Branches terete, smooth, glabrous, about 4 mm. in diameter, pale or brownish when dry. Leaves 3-foliolate, their petioles ferruginous-pubescent, 3 to 5 cm. long; leaflets ovate-elliptic to elliptic, membranaceous to chartaceous, 7 to 9 cm. long, 3 to 5 cm. wide, rather abruptly acuminate, the acumen broad and distinctly apiculate, base usually obtuse, the upper surface olivaceous, glabrous or nearly so except the somewhat pubescent midrib, the lower surface ferruginous-pubescent on the midrib, nerves and reticulations; lateral nerves about 8 on each side of the midrib, distinct. Inflorescences long-peduncled, 40 to 50 cm. long, when young more or less ferruginous-pubescent, in age glabrous or nearly so. Flowers purplish-pink, mostly in the upper 10 cm., about 3 cm. long, somewhat fascicled on the thickened nodes, their pedicels slender, pubescent, about 5 mm. long, the calyces subtended by 2, elliptic, subpersistent, membranaceous, distinctly nerved bracteoles which are about 10 mm. long, 6 mm. wide, sparingly pubescent, and rounded at the apices. Calyx rather strongly curved, the tube about 12 mm. long, base cuneate, the upper lip entire, ovate, 7 mm. long, the lower lip 3-lobed, the lateral lobes oblong-ovate, 5 mm. long, subacute, the middle one similar but slightly longer. Limb of the standard obovate, 2.5 cm. long, 2 cm. wide, obscurely auricled at the base, the claw 7 mm. long; wings oblong-elliptic, nearly equalling the standard, about 8 mm. wide, obtuse, conspicuously auricled at the base, the claws 7 mm. long; keel equalling the wings, oblong-obovate, inequilateral, rounded, scarcely falcate, the inner margin in the median part conspicuously toothed, base inequilateral, obtuse, not auricled. Filaments glabrous, the free parts 6 to 7 mm. long; anthers ellipsoid, 1.2 mm. long; staminal tube distinctly geniculate near its base. Ovary linear, pubescent, stipitate; ovules about 15; style glabrous, 6 to 8 mm. long. Pods flattened, about 12 cm. long, 15 to 18 mm. wide, about 4 mm. thick along the upper suture, the marginal keels scarcely exceeding the upper suture in height, valves coriaceous, somewhat acuminate, sparingly ferruginous-pubescent, slightly horizontally sulcate between the seeds; seeds about 12, elliptic, compressed, 8 mm. long, dark-brown when dry, obscurely mottled.

British North Borneo, Sandakan, *Ramos 1511* (type), September, 1920. In damp thickets at low altitudes. The same species is represented by *Native Collector 367, 1693, Bur. Sci.* from the vicinity of Kuching, Sarawak. A species well characterized by its ferruginous indumentum; its conspicuously bracteolate flowers; and its compressed, comparatively narrow, transversely sulcate, sparingly ferruginous-pubescent pods, the keels along the upper suture being exactly marginal.

OXALIDACEAE.

Sarcotheca *Blume.*

Sarcotheca pinnata sp. nov.

Frutex scandens, inflorescentiis exceptis subglaber; ramis brunneis, glabris, striatis, 8 mm. diametro, ramulis junioribus puberulis; foliis circiter 50 cm. longis, foliolis 7, chartaceis, elliptico-ovatis vel oblongo-ellipticis, 14—27 cm. longis, acuminatis, basi late rotundatis vel obscure cordatis, nervis primariis utrinque 12—15, subtus perspicuis; inflorescentiis anguste paniculatis, axillaribus, 5—7 cm. longis, subcinereo-puberulis; floribus 4 mm. longis; sepalis oblongo-ovatis, acutis, puberulis.

A woody vine, the branchlets and inflorescences sparingly pubescent. Branches brown, striate, glabrous, about 1 cm. in diameter. Leaves pinnate, up to 50 cm. long; leaflets 7, elliptic-ovate to oblong-elliptic, chartaceous, 14 to 27 cm. long, 7 to 11 cm. wide, the base rounded or that of the lowermost leaflet sometimes obscurely cordate, apex shortly acuminate, the upper surface olivaceous, smooth, shining, the lower surface somewhat paler, the midrib and nerves brownish; lateral nerves 12 to 15 on each side of the midrib, curved-ascending, prominent on the lower surface, not anastomosing but directly joining the somewhat cartilaginous margins, the reticulations distinct; petiolules 5 to 7 mm. long. Inflorescences axillary, 5 to 7 cm. long, narrowly paniculate. Flowers about 4 mm. long, white, their pedicels 2 to 4 mm. in length, jointed. Sepals 5, oblong-ovate, acute or sometimes acuminate, brown when dry, pubescent. Petals elliptic to oblong-elliptic, obtuse, glabrous, 3.5 to 4 mm. long. Stamens 10, their filaments nearly free, the younger ones up to 2.5 mm. in length, the alternating shorter ones 1 to 1.5 mm. long. Ovary composed of 5 oblong carpels about 1.5 mm. long, somewhat pubescent, united below.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1485,* October, 1920. On dry forested slopes at low altitudes. A species well characterized by its large pinnate leaves and its ample leaflets.

RUTACEAE.

Evodia *Forster.*

Evodia punctata sp. nov.

Arbor parva, partibus junioribus cinereo-puberulis; ramis glabris, teretibus, 4—5 mm. diametro, ramulis plus minusve compressis; foliis 3-foliolatis, foliolis oblongo-ellipticis vel elliptico-ovatis, chartaceis, olivaceis, utrinque concoloribus, nitidis, 9—15 cm. longis, utrinque angustatis, basi acutis, apice acuminatis, subtus perspicue atro-punctato-glandulosis, nervis utrinque 12—15, distinctis; infructescentiis lateralibus, pedunculatis, pyramidato-paniculatis, 15 cm. longis, fructibus obovoideis, 8—10 mm. longis.

A nearly glabrous shrub or small tree about 5 m. high, the very young parts cinereous-puberulent. Branches pale-brownish, terete, smooth, about 5 mm. in diameter, the branchlets and petioles rather dark-brown. Leaves 3-foliolate, their petioles 3 to 6 cm. long; leaflets oblong-elliptic to elliptic-ovate, chartaceous, olivaceous, shining, of about the same color on both surfaces, 9 to 15 cm. long, 4 to 6 cm. wide, subequally narrowed to the acuminate apex and acute base, the lower surface conspicuously black-punctate-glandular; lateral nerves 12 to 15 on each side of the midrib, spreading, slightly curved, rather obscurely anastomosing, the reticulations lax, not prominent. Infructescences lateral, peduncled, about 15 cm. long, the branches few, spreading, the lower ones up to 7 cm. long. Fruits obovoid, the cocci 8 to 10 mm. long, slightly compressed and slightly inequilateral, verrucose when dry, the apex broadly rounded, base subacute. Seeds black shining, ellipsoid, 5 to 6 mm. long.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1289*, October, 1920. In damp forests at low altitudes. A species in many respects closely resembling the Philippine *Evodia ternata* Merr., well characterized, however, by its unusually large fruits.

Evodia bintoco Blanco Fl. Filip. ed. 2 (1845) 50, ed. 3, **1** (1877) 93; Merr. Sp. Blancoanae (1918) 197.

Evodia mindanaensis Merr. in Philip. Forestry Bur. Bull. **1** (1903) 25.

British North Borneo, Kudat, *Agama 1077,* November, 1920, near the seashore. Widely distributed in the central and southern Philippines, Mindoro, Sibuyan, Tablas, Panay, Leyte, Bohol, Mindanao, and Basilan, but not previously recorded from outside of that Archipelago.

MELIACEAE.

Chisochiton *Jussieu.*

Chisochiton brachyanthum sp. nov.

Arbor parva, partibus junioribus plus minusve pubescentibus; foliis alternis, 25—60 cm. longis, foliolis 6—12, oblongis vel oblongo-ellipticis, subcoriaceis, olivaceis, utrinque nitidis, 8—16

cm. longis, abrupte subcaudato-acuminatis, nervis utrinque 10—13, supra leviter impressis, subtus valde perspicuis; inflorescentiis anguste paniculatis vel subspiciformibus, 40—50 cm. longis, ramis paucis, brevibus, supra obsoletis et floribus superioribus fasciculatim dispositis; floribus circiter 13 mm. longis, 4-meris; calyce truncato; petalis glabris, 4, in dimidio inferiore cum tubum coalitis; tubo in partibus superioribus extus adpresse hirsuto-ciliato, intus glabro, crenato; antheris 4 vel 5, 1 mm. longis; fructibus junioribus dense ferrugineo-pubescentibus.

A small tree, the younger parts more or less pale ferruginous-pubescent, branches terete, dark-brown, glabrous, the ultimate branchlets about 5 mm. in diameter. Leaves alternate, 25 to 60 cm. long, the rachis brown, sparingly pubescent or ultimately glabrous; leaflets 6 to 12, oblong to oblong-elliptic, subcoriaceous, pale-olivaceous to somewhat brownish when dry, shining on both surfaces, 8 to 16 cm. long, 4 to 7 cm. wide, rather abruptly caudate-acuminate, the acumen up to 2 cm. long, blunt, base usually rounded, glabrous on both surfaces or the midrib and nerves beneath sparingly appressed-pubescent; lateral nerves 10 to 13 on each side of the midrib, spreading, obscurely anastomosing, very prominent on the lower surface. Inflorescences narrowly paniculate or subspiciform, 40 to 50 cm. long, the branches few, distant, spreading, the lower ones up to 7 cm. long, usually much shorter, the upper ones obsolete and the flowers fascicled along the rachis. Flowers 4-merous, about 13 mm. long, sessile. Calyx cup-shaped, truncate, about 1.8 mm. in diameter. Petals 4, linear, about 12 mm. long, 1.8 mm. wide, glabrous, obtuse, united for the lower half with the staminal tube. Staminal tube cylindric, about 12 mm. long, 1.8 to 2 mm. in diameter, somewhat appressed-hirsute in the upper part, crenate at the apex, the anthers 4 or 5, 1 mm. in length, inserted just below the rim and with a few ciliate hairs on the back. Ovary ovoid, appressed-pubescent; style pubescent in the lower half; stigma subcapitate, 0.5 mm. in diameter. Disk 0. Very young fruits densely ferruginous-pubescent, obovoid.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1252* (type), *1706, 1899,* October, November, and December, 1920. In primary forests at low altitudes, with the local Malay name *bunga tauan.* A species allied to *Chisochiton amabilis* Miq., but differing, among other characters, in its shorter 4-merous flowers.

Chisochiton kinabaluense sp. nov.

Arbor, inflorescentiis caulinis exceptis glabra vel subglabra; foliis alternis, 40—50 cm. longis, foliolis 8—10, oppositis, oblongis, chartaceis, subolivaceis, nitidis, 14—20 cm. longis, tenuiter acuminatis, basi inaequilateralibus, acutis, nervis utrinque circiter 12, subtus perspicuis; inflorescentiis caulinis, anguste paniculatis, circiter 40 cm. longis, ramis paucis, patulis, inferioribus circiter 7 cm. longis; floribus 4-meris, brevissime pedicellatis, racemose

dispositis, 2.7 cm. longis, extus leviter adpresse pubescentibus; calyce cupulato, truncato, 2 mm. diametro; petalis 4, liberis, tubo extus glabro, intus leviter pubescente; antheris 5 vel 6, anguste oblongis, 2 mm. longis, dorso leviter pubescente; ovario oblongo, adpresse pubescente.

A tree glabrous or subglabrous except the inflorescences, the ultimate branchlets dark-brown, terete, about 5 mm. in diameter. Leaves alternate, 40 to 50 cm. long; leaflets 8 or 10, opposite, oblong, chartaceous, subolivaceous when dry, shining, 14 to 20 cm. long, 5 to 8 cm. wide, rather slenderly but bluntly acuminate, base more or less inequilateral, acute; lateral nerves about 12 on each side of the midrib, prominent on the lower surface, scarcely anastomosing, the reticulations rather lax, distinct. Inflorescences fascicled on woody tubercles on the trunk, narrowly paniculate, about 40 cm. long, somewhat pubescent, the branches few, spreading, the lower ones about 7 cm. long. Flowers 4-merous, very shortly pedicelled and racemosely arranged on the ultimate branchlets, about 2.7 cm. long. Calyx cup-shaped, truncate, 2 mm. in diameter, sparingly appressed-pubescent. Petals 4, free, sparingly appressed-pubescent outside, obtuse, the apical part 2 to 2.5 mm. wide. Staminal tube glabrous outside, sparingly pubescent inside, about as long as the petals, irregularly and shortly toothed at the apex; anthers 5 or 6, narrowly oblong, 2 mm. in length, slightly pubescent on the back. Ovary oblong, appressed-pubescent; style slightly pubescent. Disk 0.

British North Borneo, Kiau and Minitindok Gorge, Mount Kinabalu, up to an atlitude of about 1,400 m., *Mrs. Clemens 10116* (type) *10219, 10490,* November, 1915. The inflorescences are detached, but the field label with No. 10490 indicates that they are borne near the base of the trunk. My specimen of this number shows three inflorescences attached to a woody tubercle 1.5 cm. in diameter.

Aphanamixis *Blume.*

Aphanamixis sumatrana (Miq.) Harms in Engl. and Prantl Nat. Pflanzenfam. **3/4** (1896) 296.

Amoora sumatrana Miq. Ann. Mus. Bot. Lugd.-Bot. **4** (1868) 35; C. DC. in DC. Monog. Phan. **1** (1878) 581.

British North Borneo, near Sandakan, *Villamil 266, Agama 413, Clemens 11775, Ramos 1128:* Sarawak, *Foxworthy 123.* In forests at low altitudes. Malay Peninsula, Sumatra.

Aglaia *Loureiro.*

Aglaia baramensis sp. nov. § *Hearnia.*

Arbor, partibus junioribus inflorescentiisque dense ferrugineo-pubescentibus, indumento stellato; foliis alternis, 20—28 cm. longis, foliolis 9—13, lanceolatis, subcoriaceis, 7—14 cm. longis, acuminatis, basi cuneatis, nervis utrinque 15—17, vetustioribus utrinque glabris; paniculis 20—25 cm. longis, dense ferrugineo-pubescentibus; multifloris, floribus 5-meris, brevissime pedicellatis, subracemose dispositis; calyce circiter 1.5 mm. diametro, lobis orbiculari-ovatis; petalis liberis; tubo stamineo 5-fido.

A tree, the younger parts, young leaves, and inflorescences densely ferruginous-pubescent, the indumentum short, more or less stellate. Leaves alternate, 20 to 28 cm. long, the petiole and rachis more or less ferruginous-pubescent, in age glabrous or nearly so; leaflets subcoriaceous, lanceolate, 9 to 13, opposite or the lower ones subalternate, 7 to 14 cm. long, 1 to 1.8 cm. wide, narrowed upward to the acuminate apex and below to the usually cuneate base, the upper surface grayish or brownish, glabrous, the lower surface rather dark-brown, when young stellate-tomentose, ultimately glabrous; lateral nerves 15 to 17 on each side of the midrib, prominent on the lower surface, curved-anastomosing, the reticulations obscure; petiolules 2 to 3 mm. long. Panicles terminal and in the uppermost axils, 20 to 25 cm. long, densely ferruginous-pubescent, the branches more or less spreading, the lower ones up to 10 cm. long. Flowers numerous, shortly pedicelled, subracemosely arranged on the ultimate branchlets. Calyx about 1.5 mm. in diameter when spread, the lobes orbicular-ovate, 0.7 mm. long, usually obtuse, densely pubescent. Petals obovate, free, about 2 mm. long. Staminal tube 5-cleft; anthers 5, very short, at the tips of the lobes.

Sarawak, Baram, Lio-Matu, *Major J. C. Moulton 19* (= *2768 Native Collector* Bur. Sci.), October 30, 1914, and at the same locality, *Moulton 6712*, October 15, 1920. A species strongly characterized by its subcoriaceous, narrow, lanceolate leaflets, in its vegetative characters radically differing from all previously described species of this section. The staminal tube is divided nearly to the base into 5, free, obovate segments.

BURSERACEAE.

Santiria *Blume.*

Santiria samarensis Merr. in Philip. Jour. Sci. **10** (1915) Bot. 31.

British North Borneo, Sebuga, near Sandakan, *Ramos 1807*, December, 1920. In damp forests at low altitudes. Previously known only from the Philippines, where it occurs in southern Luzon, Palawan, Leyte, Samar and Mindanao. *Canarium caudatifolium* Merr. and *C. crassifolium* Merr. are both synonyms.

Canarium *Linnaeus.*

Canarium pseudocommune Hochr. Pl. Bogor. Exsicc. (1904) 60.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1698*, November, 1920. In damp forests at low altitudes. The original description was based on specimens cultivated in the

botanic garden at Buitenzorg, Java; it seems probable that it was introduced there from Borneo.

DICHAPETALACEAE.

Dichapetalum Thouars.

Dichapetalum holopetalum Merr. in Philip. Jour. Sci. **17** (1920) 271.

British North Borneo, Batu Lima near Sandakan, *Ramos 1296, 1750,* October and November, 1920. In forests at low altitudes. The specimen conform closely with the Philippine (Mindanao) type.

EUPHORBIACEAE.

Glochidion Forster.

Glochidion lancisepalum sp. nov. § *Hemiglochidion.*

Frutex glaber, ramulis tenuibus, plus minusve angulatis; foliis chartaceis vel subcoriaceis, lanceolatis vel oblongo-lanceolatis, 11—20 cm. longis, apice tenuiter acuminatis, interdum falcatis, basi cuneatis, subtus minutissime verruculosis, nervis utrinque circiter 5, adscendentibus; floribus fasciculatis; ♀ paucis, sepalis 6, lanceolatis, 2 mm. longis; ovario globoso, 3-locellato; stylis cylindraceis, 2.5 mm. longis, basi haud constrictis; ♂ antheris 3, connatis, 2 mm. longis, sepalis lanceolatis, 2.5 mm. longis, exterioribus accrescentibus.

A glabrous, apparently dioecious shrub, the ultimate branches slender, about 1 mm. in diameter, somewhat angled. Leaves chartaceous to subcoriaceous, lanceolate to oblong-lanceolate, 11 to 20 cm. long, 2.3 to 5 cm. wide, narrowed upward to the slenderly acuminate apex, the acumen frequently falcate and rather abruptly narrowed below to the cuneate base, the upper surface olivaceous, smooth, the lower surface paler and very minutely verruculose when dry; lateral nerves about 5 on each side of the midrib, rather sharply ascending, distinct, obscurely anastomosing, the primary reticulations slender, rather lax; petioles 2 to 3 mm. long; stipules acicular, about 4 mm. long. Flowers axillary, fascicled, the pistillate ones few, their pedicels up to 6 mm. long. Sepals 6, lanceolate, about 2 mm. long, acute or somewhat acuminate, the alternating ones slightly narrower than the others. Ovary globose, glabrous, 3-celled, about 0.8 mm. in diameter. Style cylindric, 2.5 mm. long, about as thick as the ovary, not contracted at the base, very shortly 3-lobed at the tip. Staminate flowers apparently somewhat abnormal, their pedicels up to 1 cm. in length, frequently supplied with one or two lanceolate bracteoles, the outer three sepals lanceolate, acuminate, about 2.5 mm. long, accrescent and attaining a length of 4.5 mm., the inner three lanceolate, not exceeding 3 mm. in length. Stamens 3, united, the anthers about 2 mm. long, the connectives slightly produced.

Sarawak, Upper Baram, Lio-Matu, *Major J. C. Moulton 6714* (type), *6071-4*, October 12 and 15, 1920. Altitude about 160 m. A species strongly characterized by its lanceolate, slenderly acuminate, few-nerved leaves, and its lanceolate sepals. The type presents pistillate flowers only, the other numbers cited staminate flowers only, the latter for the most part being abnormal in their accrescent outer sepals.

Galearia *Zollinger and Moritzi.*

Galearia stenophylla sp. nov. § *Eugalearia.*

Frutex, ramulis inflorescentiisque pubescentibus; foliis lineari-lanceolatis vel lanceolatis, 10—25 cm. longis, 1—2.5 cm. latis, basi acutis, apice obscure acuminatis, nervis utrinque 10—15, distantibus, arcuato-anastomosantibus, perspicuis: racemis terminalibus, 3—5 cm. longis, fructibus 1-locellatis, leviter adpresse pubescentibus, 6—7 mm. longis, 8—10 mm. latis.

A shrub, the branchlets rather densely pubescent with short, brownish hairs, the branches terete, glabrous, grayish or brownish. Leaves linear-lanceolate to lanceolate, subcoriaceous, 10 to 25 cm. long, 1 to 2.5 cm. wide, greenish-olivaceous, slightly shining, glabrous on both surfaces, the base acute, gradually narrowed upward to the somewhat acuminate apex; lateral nerves 10 to 15 on each side of the midrib, curved, arched-anastomosing, prominent on the lower surface, the reticulations lax, distinct; petioles 2 to 4 mm. long. Fruiting racemes terminal, 3 to 5 cm. long, rather densely pubescent. Fruits dark-brown when dry, sparingly appressed-pubescent, 6 to 7 mm. long, 8 to 10 mm. wide, 1-celled, their pedicels ferruginous-pubescent, about 5 mm. long.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1542*, November, 1920. In forests at low altitudes. A very strongly marked species, readily distinguishable from all previously described forms by its very narrow, elongated, lanceolate leaves.

Galearia sessiliflora sp. nov. § *Eugalearia.*

Frutex, ramulis inflorescentiisque exceptis glaber; foliis chartaceis, oblongo-ellipticis, 18—25 cm. longis, perspicue acuminatis, basi plerumque leviter asymmetricis, rotundatis vel subacutis, nervis utrinque 5—8, subtus valde perspicuis; inflorescentiis ♀ folia subaequantibus, floribus sessilibus, fasciculatis; calycis lobis ovatis, 1 mm. longis, pubescentibus; petalis glabris, spatulatis vel oblongo-obovatis, 2.5—3 mm. longis, rotundatis, leviter cucullatis; ovario dense pubescente.

A shrub about 2 m. high, glabrous except the somewhat pubescent branchlets and inflorescences, the branches terete, grayish or brownish, 2 to 2.5 mm. in diameter. Leaves chartaceous, oblong-elliptic, 18 to 25 cm. long, 4 to 9 cm. wide, greenish-olivaceous, slightly shining, the base rounded or subacute, usually somewhat inequilateral, the apex rather prominently acuminate; lateral nerves 5 to 8 on each side of the midrib, somewhat impressed on the upper surface, very prominent on the lower surface, the reticulations lax, very prominent; petioles 5 to 12 mm. long, pubescent when young, ultimately glabrous. Pistillate inflorescences terminal, about as long as the leaves, the flowers sessile, fascicled. Calyx appressed-pubescent, 5-lobed, the lobes ovate, acute, about 1 mm. long. Petals glabrous, oblong-obovate to spatulate, 2.5 to 3 mm. long, the limb rounded and cucullate, the narrower basal part 1 mm. in length. Ovary densely pubescent, 2-celled; styles very short.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1312*, October, 1920. In damp forests at low altitudes. A species apparently most closely allied to *Galearia phlebocarpa* Miq., well characterized by its spatulate to oblong-obovate, slightly cucullate petals, and its sessile flowers.

Homonoia *Loureiro.*

Homonoia javensis (Blume) Muell.-Arg. in Linnaea **34** (1865) 200, DC. Prodr. **15/2** (1866) 1022; Pax and Hoffm. in Engl. Pflanzenreich **68** (1917) 112, *f. 27.*

British North Borneo, Labuk District, *Agama 1115.* In forests at low altitudes. New to Borneo. Malay Peninsula and Java to the central and southern Philippines southward to Timor and New Guinea.

Mallotus *Loureiro.*

Mallotus blumeanus Muell.-Arg. in Linnaea **34** (1865) 195, DC. Prodr. **15/2** (1866) 978; Pax in Engl. Pflanzenreich **63** (1914) 157.

British North Borneo, Kudat, *Agama 1068,* in dry forests at low altitudes. Sumatra, Java.

Mallotus moritzianus Muell.-Arg. in DC. Prodr. **15/2** (1866) 971; Pax op. cit. 152.

British North Borneo, Tawao, *Wood 906,* September, 1920. In level places along the Kumpung River. Java.

Actephila *Blume.*

Actephila dispersa (Elm.) Merr. in Philip. Jour. Sci. **4** (1909) Bot. 276.

Pimeleodendron dispersum Elm. Leafl. Philip. Bot. **1** (1908) 308.

British North Borneo, Sandakan, *Ramos 1451, Wood 930,* October, 1920. In damp forests at low altitudes. This species is widely distributed in the Philippines (Luzon, Palawan, Leyte, Siargao, Dinagat, Mindanao), but should be critically compared with *Actephila gigantifolia* Koord. of Celebes. The genus is new to Borneo.

Cleistanthus *Hooker f.*

Cleistanthus megacarpus C. B. Rob. in Philip. Jour. Sci. **6** (1911) Bot. 323.

British North Borneo, Bettotan River, *J. Agama 716,* June 9, 1919. In forests at low altitudes. Previously known only from the Philippines, where it is widely distributed from Mindoro to Negros, Samar, and Mindanao.

Omphalea *Linnaeus.*

Omphalea bracteata (Blanco) Merr. Sp. Blancoanae (1918) 230.

Tragia bracteata Blanco Fl. Filip. ed. 2 (1845) 480.

Omphalea philippinensis Merr. in Philip. Jour. Sci. **3** (1908) Bot. 236.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1453.* In forests at low altitudes. Previously known only from Luzon, the third species found in Borneo, all three also occurring in the Philippines.

ANACARDIACEAE.

Melanochyla *Hooker f.*

Melanochyla ferruginea sp. nov.

Arbor parva, ramulis et petiolis et inflorescentiis et subtus foliis dense ferrugineo-pubescentibus; foliis coriaceis, ellipticis vel oblongo-ellipticis, 18—42 cm. longis, apice plerumque late rotundatis, basi acutis, supra olivaceis, glabris, minute puncticulatis, subtus pallidioribus, molliter pubescentibus, nervis utrinque circiter 22, patulis, valde perspicuis; paniculis angustatis, circiter 30 cm. longis; floribus 5—6 mm. longis, dense ferrugineo-pubescentibus; calycis tubo 3 mm. longo, lobis subacutis, 1.5 mm. longis; petalis oblongis, 4—5 mm. longis, crassis, dense ferrugineo-pubescentibus, partibus apicalibus reflexis intus glabris.

A small tree the branchlets, petioles, inflorescences, and the lower surface of the leaves on the midribs and nerves densely ferruginous-pubescent. Branches terete, sparingly lenticellate, brownish, glabrous, 5 to 6 mm. in diameter. Leaves coriaceous, elliptic to oblong-elliptic, 18 to 42 cm. long, 7 to 17 cm. wide, the apex broadly rounded or somewhat retuse, base acute, the upper surface olivaceous, glabrous except for the more or less hirsute midrib, supplied with numerous, scattered, minute pits, the lower surface paler than the upper, conspicuously and softly pubescent, the indumentum dense only on the midrib; petioles 1.5 to 2.5 cm. long, densely ferruginous-pubescent; lateral nerves about 22 on each side of the midrib, spreading, very prominent on the lower surface. Panicles narrow, about 30 cm. long. Flowers 5 to 6 mm. long, densely ferruginous-pubescent, the calyx tube about 3 mm. in length, the lobes oblong-ovate, subacute, coriaceous, 1.5 mm. long. Petals oblong, 4 to 5 mm. long, thickened, densely ferruginous-pubescent on both surfaces except on the inner surface of the reflexed apical part. Filaments 2 mm. long, densely ferruginous-pubescent. Anthers narrowly oblong, 1 mm. long. Rudimentary ovary densely ferruginous-villous.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1594*, November, 1920. In damp forests along small streams at low altitudes. A species manifestly allied to *Melanochyla beccariana* Oliv., but with larger, more numerously nerved leaves and very much smaller, rather congested flowers. In Oliver's species the flowers exceed 1 cm. in length. It is possible that the present species may be the same as the form characterized by Oliver as var. *breviflora*, the flowers of this form being described as from $\frac{1}{4}$ to $\frac{1}{3}$ of an inch in length.

Semecarpus *Linnaeus f.*

Semecarpus borneensis sp. nov.

Frutex vel arbor parva, ramis glabris, ramulis patule ciliatis; foliis subcoriaceis, in siccitate pallidis, nitidis, ellipticis vel oblongo-ellipticis vel obovato-ellipticis, 10—20 cm. longis, breviter obtuse acuminatis, basi acutis, supra glabris, subtus glaucescentibus, ad costam nervosque longe ciliatis, nervis primariis utrinque 10—14, perspicuis, curvatis, secundariis rectangularibus; inflorescentisque ♂ axillaribus, usque ad 20 cm. longis, subracemosis vel depauperato-paniculatis, perspicue ciliatis; floribus breviter pedicellatis, subglomeratis, bracteis anguste oblongis, 2—3 mm. longis, perspicue rufo-ciliatis.

A shrub or small tree, the branchlets, inflorescences, and leaves on the midrib and nerves conspicuously ciliate with spreading hairs. Branches glabrous, terete, grayish-brown. Leaves subcoriaceous, pale when dry, shining, elliptic to oblong-elliptic or obovate-elliptic, 10 to 20 cm. long, 5 to 8 cm. wide, apex shortly and obtusely acuminate, base acute, not decurrent, the upper surface glabrous, the lower somewhat glaucous, the ciliate spreading hairs scattered on the midrib and lateral nerves; lateral nerves 10 to 14 on each side of the midrib, prominent, rather spreading, curved, anastomosing, the primary reticulations leaving the nerves at right angles, prominent, the ultimate free ones rather distinct; petioles 1.3 to 2 cm. long. Staminate inflorescences axillary, solitary, subracemose or depauperate-paniculate, 6 to 20 cm. long, conspicuously ciliate, the hairs spreading, those on the younger parts rufous. Flowers crowded at the nodes in small glomerules, their pedicels 1 mm. long or less. Bracts narrowly oblong, 2 to 3 mm. long, conspicuously rufous-ciliate, the bracteoles similar, smaller. Calyx about

2 mm. in diameter, the lobes ovate, acute or acuminate, 0.8 mm. long, ciliate. Petals oblong-elliptic, 2 mm. long.

British North Borneo, Rosop, near Kudat, *Agama 1061,* November 15, 1920. On dry slopes, altitude about 20 m. A species allied to *Semecarpus glauca* Engl., from which it is distinguished by its much shorter, axillary not terminal, usually racemose rather than paniculate inflorescences, larger leaves, and other characters.

Semecarpus oblanceolata sp. nov.

Frutex erectus, simplex, circiter 1 m. altus, inflorescentiis puberulis exceptis glaber; foliis oblanceolatis, subcoriaceis, circiter 75 cm. longis, 13 cm. latis, supra olivaceis, nitidis, glabris, subtus pallidioribus, minute scaberulis, apice breviter acuminatis, deorsum gradatim angustatis, basi obtusis, 1—1.5 cm. latis; nervis primariis lateralibus utrinque circiter 30, utrinque valde perspicuis, nervis secundariis inter primarios transversis, angulo recto abeuntibus, ultimis obscuris, liberis; paniculis ♂ terminalibus 20 cm. longis, puberulis; floribus 5-meris; sepalis petalisque extus puberulis, petalis elliptico-ovatis, 2.5 mm. longis.

An erect, apparently unbranched shrub about 1 m. high, glabrous except the puberulent inflorescences, the stems pale-brown when dry, about 1 cm. in diameter, sparingly lenticellate. Leaves crowded at the apices of the stems, coriaceous or subcoriaceous, oblanceolate, about 75 cm. long, 13 cm. wide, the upper surface olivaceous, shining, glabrous, the lower surface paler but scarcely glaucous, minutely scabrid, the apex shortly and sharply acuminate, gradually narrowed in the lower three quarters to the abruptly rounded base which is but from 1 to 1.5 cm. in width, the midrib, lateral nerves, and reticulations very prominent on both surfaces, the nerves about 30 on each side of the midrib, the reticulations lax, the primary ones leaving the nerves at right angles, the ultimate veinlets obscure, free; petioles stout, angular, about 1 cm. long. Staminate panicles terminal, erect, about 20 cm. long, all parts puberulent, the lower branches up to 12 cm. in length, their subtending bracts narrowly lanceolate, acuminate, about 5 mm. long. Buds obovoid, their pedicels about 1 mm. long. Calyx puberulent, 5-lobed, the lobes triangular-ovate, acute, 0.5 mm. long. Petals 5, elliptic-ovate, somewhat acuminate, 2.5 mm. long, puberulent externally, rather distinctly nerved and reticulate.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1517,* November, 1920. On steep forested slopes near streams at low altitudes. A species very closely allied to the Philippine *Semecarpus subsessilifolia* Merr.; in habit, size and appearance of its leaves closely approximating the latter species, differing in its much more lax reticulations, the nerves and midribs prominently raised on both surfaces, the lower surface of the leaves minutely but distinctly scabrid.

HIPPOCRATEACEAE.

Salacia *Linnaeus.*

Salacia nitidissima sp. nov.

Frutex scandens, glaberrimus; ramis ramulisque minute lenticellatis; foliis coriaceis, elliptico-ovatis vel oblongo-ellipticis, utrinque nitidis, 8—15 cm. longis, basi acutis, apice obtuse acuminatis, nervis utrinque 8—10, perspicuis; floribus paucis, axillaribus, 9—11 mm. diametro, sepalis orbiculari-ovatis, rotundatis, 2 mm. diametro, petalis ellipticis vel elliptico-ovatis, 5—5.5 mm. longis, disco crasso, 3 mm. diametro, filamentis latis, circiter 1 mm. longis.

A glabrous scandent vine, the branches reddish-brown to somewhat grayish with numerous small lenticels, the ultimate branchlets about 1.5 mm. in diameter. Leaves opposite, coriaceous, elliptic-ovate to oblong-elliptic, rather pale when dry and prominently shining on both surfaces, 8 to 15 cm. long, 3 to 5.5 cm. wide, entire, the margins somewhat recurved, subequally narrowed to the acute base and the bluntly acuminate apex, the acumen up to 1 cm. long; lateral nerves 8 to 10 on each side of the midrib, rather prominent on the lower surface, distinct; petioles 8 to 10 mm. long. Flowers few, in axillary fascicles, 9 to 11 mm. in diameter, their pedicels 3 to 4 mm. long, subtended by few broadly ovate bracteoles about 1 mm. in length. Sepals 5, orbicular-ovate, rounded, about 2 mm. in diameter, glabrous. Petals elliptic to elliptic-ovate, rounded, 5 to 5.5 mm. long. Disk about 3 mm. in diameter, thick. Stamens 3, their filaments flattened, about 1 mm. long, scarcely exceeding the disk, the anthers transversely oblong.

British North Borneo, Sibuga, near Sandakan, *Ramos 1860,* December, 1920. In open forests at low altitudes. A species apparently most closely allied to *Salacia maingayi* Laws., but with more numerously nerved, blunt-acuminate leaves and longer petioles. The flowers, as in Lawson's species, are fascicled, few in number, but not borne on tubercles.

Salacia oblongifolia Blume Bijdr. (1825) 220.

British North Borneo, Batu Lima near Sandakan, *Ramos 1561, 1690.* In secondary forests at low altitudes. Previously known only from Java, the specimens agreeing very closely both with Blume's description and with Javan material.

ICACINACEAE.

Phytocrene *Wallich.*

Phytocrene anomala sp. nov.

Frutex scandens hirsutus; foliis chartaceis, oblongis vel oblongo-oblanceolatis, integris, acuminatis, basi rotundatis cordatisque, nervis utrinque 8—10, subtus valde perspicuis; inflorescentiis

♂ et ♀ globosis, axillaribus, solitariis, pedunculatis, ♂ 8 mm. diametro, floribus 4-meris, bibracteolatis, bracteolis linearis, hirsutis; fructibus junioribus oblongo-ellipsoideis, 2 cm. longis, densissime adpresse reflexeque hirsutis.

A scandent woody vine, the branchlets and leaves on the lower surface rather prominently hirsute. Branches up to 5 mm. in diameter, grayish, ultimately glabrous, the younger branchlets about 1.5 mm. in diameter, with two types of indumentum: pale, short, numerous, spreading hairs; and scattered, longer, purplish ones. Leaves chartaceous, oblong to broadly oblong-oblanceolate, entire, the upper surface olivaceous, glabrous or nearly so or the midrib somewhat hirsute, the lower surface paler and conspicuously hirsute on the midrib, nerves, and reticulations, the margins entire, or obscurely denticulate in younger leaves, narrowed upward to the somewhat acuminate apex and below to the rather abruptly rounded and distinctly cordate base; lateral nerves 8 to 10 on each side of the midrib, very prominent on the lower surface as are the reticulations; petioles hirsute, 10 to 13 mm. long. Staminate inflorescences axillary, peduncled, solitary, globose, the heads about 8 mm. in diameter, their peduncles hirsute, about 10 mm. long, the staminate flowers numerous, crowded, 2-bracteolate, the bracteoles linear, 3 to 4 mm. long, densely hirsute. Flowers funnel-shaped, about 3 mm. long, somewhat hirsute, 4-lobed, the lobes ovate to elliptic-ovate, acute, about 1.3 mm. long. Stamens 4, their filaments about 2 mm. in length; anthers elliptic-oblong, 1 mm. long. Pistillate inflorescences axillary, solitary, glabrous, the young fruits ovoid to oblong-ellipsoid, narrowed at both ends, about 2 cm. long, densely hirsute with reflexed, appressed, brown, stiff hairs, the calyces similar to those of the staminate flowers, somewhat accrescent and 5 to 6 mm. in length.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1848, 1508, 1534* (type), October, November, and December, 1920. In secondary forests at low altitudes. Sarawak, Upper Baram, Lio-Matu, *Moulton 6703-25*, October, 1920. A remarkable species, not only on account of its vegetative characters, but also on account of its solitary, globose, axillary, peduncled staminate heads, in this last character differing radically from all previously known representatives of the genus.

Iodes *Blume.*

Iodes philippinensis Merr. in Philip. Jour. Sci. **3** (1908) Bot. 241.

British North Borneo, Sapang and Batu Lima, near Sandakan, *Yates 26, Ramos 1410*. In thickets and secondary forests at low altitudes. The material exactly matches *Iodes philippinensis* Merr. which is common in the central and southern Philippines, southern Luzon to Palawan and Mindanao, in all or most islands.

ELAEOCARPACEAE.

Elaeocarpus *Linnaeus.*

Elaeocarpus brevipes sp. nov.

Arbor circiter 8 m. alta, pubescens; foliis breviter petiolatis, oblongis, chartaceis vel subcoriaceis, usque ad 17 cm. longis, acuminatis, basi obtusis vel subacutis, margine perspicue distanter serratis, nervis utrinque circiter 12, subtus perspicuis; stipulis 6—7 mm. longis, palmatim laciniatis; racemis usque ad 12 cm. longis, multifloris, floribus 4—5 mm. longis, sepalis extus adpresse pubescentibus; petalis obovatis, glabris, laciniis numerosis.

A tree about 8 m. high, more or less softly pubescent. Branches terete, smooth, ultimately glabrous, brown, the branchlets softly pubescent with short hairs. Leaves oblong, chartaceous to subcoriaceous, olivaceous, somewhat shining, 11 to 17 cm. long, 5 to 7 cm. wide, the apex acuminate, base obtuse to subacute, margins rather conspicuously serrate in the upper one-half to two-thirds, entire below, the upper surface glabrous or slightly pubescent on the midrib, the lower surface rather uniformly pubescent with short hairs; stipules pubescent, deciduous, orbicular to obovate in outline, 6 to 7 mm. long, palmately laciniate, the lobes 7 to 9, usually extending to about the middle; petioles pubescent, 7 to 10 mm. long. Racemes axillary, more or less fascicled, 6 to 12 cm. long, pubescent. Flowers numerous, white, 4 to 5 mm. long, their pedicels 5 to 8 mm. long. Sepals 5, oblong-ovate, acute, sparingly appressed-pubescent, 4 to 5 mm. long. Petals equaling the sepals; glabrous, obovate, the fimbriae about 25, extending to about the middle. Stamens about 30, the anthers blunt, 1.8 mm. long. Ovary pubescent; style 2 mm. long, pubescent below.

British North Borneo, Batu Lima, near Sandakan, *Wood 952*, October 15, 1920. In damp forests at low altitudes. A species manifestly allied to *Elaeocarpus gambir* Becc., differing especially in its rather conspicuously toothed not entire leaves.

TILIACEAE.

Grewia *Linnaeus.*

Grewia pyriformis sp. nov.

Arbor parva, inflorescentiis exceptis glabra; foliis coriaceis, nitidis, oblongo-ellipticis vel elliptico-ovatis, 20—35 cm. longis, basi late acutis vel rotundatis, leviter asymmetricis, obscure 3-nerviis, apice obtuse acuminatis, nervis utrinque 6—10, valde perspicuis; paniculis axillaribus terminalibusque, pubescentibus, 8—12 cm. longis; fructibus pyriformibus, glabris, 3 cm. longis, endocarpio osseo, mesocarpio fibroso.

A small tree, glabrous except the inflorescences, the branches reddish-brown or grayish, somewhat rugose when dry. Leaves coriaceous, oblong-elliptic to elliptic-ovate, 20 to 35 cm. long, 9 to 14 cm. wide, entire, brownish-olivaceous to greenish-olivaceous when dry, shining on both surfaces, the base broadly acute to rounded, somewhat 3-nerved, the axillary glands when present not bearded, the apex broadly acuminate; lateral nerves, including the basal pair, 6 to 10 on each side of the midrib, somewhat ascending, curved-anastomosing close to the margin, prominent on both surfaces, the primary reticulations rather lax, distinct, subparallel; petioles 1.5 to 2.5 cm. long. Panicles axillary and terminal, in fruit 8 to 12 cm. long, somewhat pubescent. Fruits obovoid or pyriform, smooth, brown when dry, glabrous, about 3 cm. long, the endocarp hard, bony, the mesocarp fibrous.

British North Borneo, Batu Lima, near Sandakan, *Ramos 1704* (type), *1438, 1622,* October and November, 1920. In damp forests at low altitudes. A species manifestly in close alliance with the Philippine *Grewia stylocarpa* Warb., from which it is easily distinguished by its much larger fruits.

Neesia *Blume.*

Neesia synandra Mast. in Hook. f. Fl. Brit. Ind. **1** (1874) 352, Jour. Linn. Soc. Bot. **14** (1875) 504; King in Jour. As. Soc. **60** (1891) 56 [Mat. Fl. Malay Penin. **1** (1891) 165].

British North Borneo, Batu Lima, near Sandakan, *Ramos 1540,* November, 1920. The specimen is in fruit and so is not directly comparable with my material of *N. synandra* Mast. from the Malay Peninsula and Penang. The vegetative characters, however, seem to be an exact match for Penang material, coll. *Fox.* The fruits are described as from 6 to 9 inches long and 4 to 5 inches in diameter and further as ovoid-conic, much as in the Javan *Neesia altissima* Blume. The fruits of the present species, not quite mature, are ellipsoid, when fresh 30 cm. long and 18 cm. in diameter, when dry about 20 cm. long and 10 to 12 cm. in diameter. The leaves attain a length of 50 cm. and a breadth of 25 cm. It may represent a distinct species, but more and complete material of both *Neesia synandra* Mast., and *N. altissima* Blume will be necessary to determine this point.

Boschia *Korthals.*

Boschia griffithii Mast. in Jour. Linn. Soc. Bot. **14** (1875) 503, *t. 15, f. 29-39, t. 16, f. 40-42;* King in Jour. As. Soc. Bengal **60** (1891) 55 [Mat. Fl. Malay. Pen. **1** (1891) 164].

British North Borneo, Batu Lima, near Sandakan, *Ramos 1794.* In forests at low altitudes. All the known species of this genus are represented in the herbarium of the Bureau of Science. The present species was previously known from the Malay Peninsula and Sumatra.

STERCULIACEAE.

Sterculia *Linnaeus.*

Sterculia trichopetiolata sp. nov.

Frutex circiter 2 m. altus, petiolis densissime ferrugineo-hirsutis exceptis glaber vel subglaber; ramulis circiter 5 mm. diametro; foliis oblanceolatis vel oblongo-oblanceolatis, chartaceis, utrinque glabris nitidisque, 27—42 cm. longis, tenuiter caudato-acuminatis, deorsum gradatim angustatis, basi acutis, nervis utrinque 18—20, subtus valde perspicuis; stipulis membranaceis, anguste oblongo-lanceolatis, 1.5—2 cm. longis, margine ciliatis; paniculis glabris, circiter 25 cm. longis, ramis patulis, inferioribus 5 cm. longis, bracteis caduceis, 6—10 mm. longis; floribus ♂ circiter 11 mm. longis, extus glabris, lobis triangulari-ovatis, acutis, erectis vel patulis, haud coherentibus, 4 mm. longis, intus hirsutis; antheris 10; folliculis oblongis, 5—8 cm. longis, rostrato-acuminatis, extus densissime ferrugineo-pubescentibus, intus glabris.

A shrub about 2 m. high, glabrous or nearly so except the very densely ferruginous-hirsute, somewhat thickened petioles, the ultimate branches brownish, terete, glabrous, sparingly lenticellate, about 5 mm. in diameter. Leaves crowded at the apices of the branchlets, oblanceolate to oblong-oblanceolate, chartaceous, olivaceous, glabrous and shining on both surfaces, 27 to 42 cm. long, 6 to 12 cm. wide, the apex slenderly caudate-acuminate, gradually narrowed below to the acute base; lateral nerves 18 to 20 on each side of the midrib, somewhat curved, arched-anastomosing, very prominent on the lower surface as are the lax primary reticulations; petioles about 1 cm. long, very densely hirsute with stiff spreading ferruginous hairs 2 to 3 mm. in length; stipules membranaceous, narrowly oblong-lanceolate, obtuse or acuminate, 1.5 to 2 cm. long, about 4 mm. wide, their margins ciliate, otherwise glabrous or nearly so. Panicles glabrous, in the uppermost axils, in anthesis about 25 cm. long, the branches spreading, the lower ones about 5 cm. in length, when young the primary branches subtended by membranaceous, oblong-ovate to lanceolate, caducous bracts, 6 to 10 mm. in length. Staminate flowers about 11 mm. long, glabrous outside, the tube somewhat cup-shaped, about 6 mm. long, rounded or obtuse at the base, the lobes 5, triangular-ovate, acute, erect or spreading, not at all cohering, hirsute inside, about 4 mm. long. Anthers about 10, 1.2 mm. long, the globose head about 2.5 mm. in diameter, the glabrous androphore 2 mm. in length. Follicles oblong, 5 to 8 cm. long, about 2 cm. wide, very densely ferruginous-pubescent externally, glabrous internally, rostrate-acuminate, base narrow, the pericarp subcoriaceous. Seeds 2 to 5, dark-brown, ellipsoid, about 12 mm. long.

British North Borneo, Batu lima, near Sandakan, *Ramos, 1702* (type), *Agama 1030*, November, 1920. On steep forested slopes at low altitudes. A species belong in the group with *Sterculia* *spatulata* Warb., in general appearance very similar *to S. yatesii* Merr., differing from the latter in its very densely ferruginous-hirsute petioles, in its flowers being glabrous, and in its shorter perianth lobes which do not at all cohere and are not at all arched.

DILLENIACEAE.

Actinidia *Lindley.*

Actinidia latifolia (Gard. & Champ.) comb. nov.

Heptaca latifolia Gard. & Champ. in Hook. Jour. Bot. Kew Miscel. **1** (1849) 243.

Actinidia Championi Benth. Fl. Hongk. (1861) 26; Dunn in Jour. Linn. Soc. Bot. **39** (1911) 407.

Kadsura pubescens Miq. Fl. Ind. Bat. Suppl. (1861) 620.

Actinidia miquelii King in Jour. As. Soc. Bengal **59-2** (1890) 126, Ann. Bot. Gard. Calcutta **5** (1896) *t. 176.*

British North Borneo, Mount Kalawat, *Mrs. Clemens 11166,* December 11, 1915.

The specimen, in fruit, matches *Teysmann 4229* from Lampongs, Sumatra, a cotype of Miquel's *Kadsura pubescens,* and *King's collector 5437* from Perak, which were kindly loaned to me by Col. A. Gage, Director of the Botanic Garden, Calcutta, for examination. Dunn,* in his revision of the genus *Actinidia,* states that there does not appear to be any distinction to be drawn between *A. championi* and *A. miquelii;* I agree with Mr. Dunn after comparing Chinese and Malayan Material. The oldest valid specific name is that supplied by *Heptaca latifolia* Gard. & Champ. Fukien and Kwangtung Provinces, China, Hongkong, Formosa, Indo-China, Malay Peninsula, Sumatra. The genus is new to Borneo.

Saurauia *Willdenow.*

Saurauia amplifolia sp. nov.

Frutex vel arbor parva, pedicellis floribusque leviter pubescentibus exceptis glabra, ramulis ultimis 6—8 mm. diametro, paleis paucis crassis lanceolatis adpressis instructis; foliis chartaceis, oblongo-ellipticis vel oblongo-oblanceolatis, 45—55 cm. longis, usque ad 21 cm. latis, supra laevibus, subolivaceis, nitidis, subtus pallidioribus, apice acutis vel breviter acuminatis, basi acutis, margine distanter denticulatis, nervis utrinque 15—19, subtus perspicuis; floribus plerisque fasciculatis, fasciculis caulinis vel in ramis vetustioribus, pedicellis tenuibus, leviter pubescentibus, usque ad 1.5 cm. longis; floribus 5-meris, 1.4 cm. diametro, sepalis ellipticis, 4.5 mm. longis, extus leviter pubescentibus; staminibus circiter 20; ovario ovoideo, leviter pubescente, stylis 3 liberis.

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* Journ. Linn. Soc. Bot. 39 (1911) 394-410.

A shrub or small tree glabrous except the sparingly pubescent pedicels and flowers, the ultimate branchlets 6 to 8 mm. in diameter, gray or dark-brown and with few appressed, lanceolate, acuminate scales 1.5 to 2 mm. in length. Leaves chartaceous oblong-elliptic to oblong-oblanceolate, 45 to 55 cm. long, 15 to 20 cm. wide, the upper surface greenish-olivaceous, somewhat shining, the lower paler, apex acute or shortly acuminate, narrowed below to the acute base, the margins distantly but rather conspicuously denticulate or sometimes crenate, the slightly projecting teeth being formed by the excurrent nervules; lateral nerves 15 to 19 on each side of the midrib, prominent on both surfaces, especially so beneath, and on the lower surface with occasional, widely scattered, appressed, linear-lanceolate scales, arched-anastomosing close to the margin, the primary reticulations lax; petioles often rather stout, about 3 cm. long. Flowers chiefly in large, very dense fascicles on the trunk and larger branches below the leaves, the pedicels often very numerous, up to 100 or more in a fascicle, sometimes few and but 8 or 10 or even fewer in a fascicle, the pedicels slender, sparingly pubescent, up to 1.5 cm. long. Flowers about 1.4 cm. in diameter, the sepals elliptic, obtuse or rounded, about 4.5 mm. long, sparingly pubescent externally. Corolla lobes 5 to 6 mm. long, 2.5 to 4 mm. wide, the apex somewhat inequilateral. Stamens about 20, the filaments and anthers 2 mm. in length. Ovary ovoid, slightly pubescent; styles 3, free, 3.5 mm. long. Fruit globose, glabrous about 8 mm. in diameter.

British North Borneo, Batu Lima and Sibuga, near Sandakan, *Ramos 1245* (type), *1829*, *Agama 1045*, November and December, 1920. On damp forested slopes at low altitudes. A species well characterized by being nearly glabrous throughout; by its very large, smooth, glabrous leaves; and by its densely fascicled flowers, the flowers being for the most part borne on the trunk and larger branches, many fascicles being from 3 to 5 cm. in diameter and often presenting 100 or more pedicels.

THEACEAE.

Gordonia Ellis.

Gordonia grandiflora sp. nov.

Arbor circiter 12 m. alta; foliis brevipetiolatis, coriaceis, oblongo-ellipticis, usque ad 18 cm. longis, breviter obtuseque acuminatis, basi rotundatis vel leviter cordatis, margine crenulatis; floribus permagnis, 10 ad 11 cm. diametro; capsulis junioribus 5 ad 6 cm. longis, apiculato-acuminatis.

A tree about 12 m. high, the stout branchlets and the lower surfaces of the leaves somewhat pubescent. Leaves subsessile, coriaceous, oblong-elliptic, 14 to 18 cm. long, 6 to 8 cm. wide, shining, margins crenulate, apex very broadly and obtusely acuminate, base somewhat narrowed and abruptly rounded or slightly cordate, the midrib very prominent beneath, the lateral nerves slender, about 15 on each side of the midrib. Flowers white, axillary, solitary, 10 to 11 cm. in diameter. Sepals coriaceous, broadly ovate to orbicular-ovate, rounded, glabrous or slightly pubescent, 1.5 to 2 cm. long and somewhat accrescent in anthesis. Petals obovate to oblong-obovate, 4 to 5 cm. long, somewhat pubescent externally. Stamens very numerous, free, the filaments glabrous, up to 3 cm. long; anthers 3 to 3.5 mm. long. Ovary pubescent. Style slender, glabrous, up to 2.5 cm. long. Immature capsules 5 to 6 cm. long, apiculate-acuminate, sulcate. Seeds winged.

British North Borneo, Rosab, near Kudat, *Castro 972*, November 14, 1920. On dry slopes, altitude about 50 m. A species well characterized by its unusually large subsessile leaves and by its very large flowers.

In this connection the species described by me from Amboina as *Gordonia rumphii* Merr. Inter. Herb. Amb. (1917) 368 is manifestly identical with the form described by Miquel as *Laplacea amboinensis*. The synonymy should be as follows:

Gordonia amboinensis (Miq.) comb. nov.

Laplacea amboinensis Miq. Ann. Mus. Bot. Lugd. Bat. **4** (1868) 114.

Haemocharis amboinensis Burkill in Jour. Str. Branch Roy. As. Soc. **76** (1917) 141, 158.

Gordonia rumphii Merr. Interpret. Herb. Amb. (1917) 368.

I agree with Burkill's expressed opinion* that the Malayan species of *Haemocharis* (*Laplacea*) should be placed in *Gordonia*. In discussing this particular species Mr. Burkill treated it as *Haemocharis* rather than *Laplacea*. I can find no reference to its previous treatment under *Haemocharis*.

FLACOURTIACEAE.

Taraktogenos *Kurz.*

Taraktogenos grandiflora sp. nov.

Arbor circiter 10 m. alta, ramulis et subtus foliis ad costam nervosque pubescentibus; foliis oblongis, coriaceis, 25—35 cm. longis, abrupte acuminatis, basi subrotundatis, leviter inaequilateralibus, nervis utrinque 10—12, subtus valde perspicuis, petiolo 6—8 mm. longo, floribus ♂ 3—4 cm. diametro, cymis axillaribus, paucifloris; sepalis 8, orbicularibus vel obovatis, 1.5—2 cm. longis; petalis 9—12, usque ad 10 mm. longis, leviter fimbriatis; staminibus numerosis.

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*Burkill, I. H., Gordonia, Journ. Str. Branch, Roy. As. Soc. 76. (1917) 133-159, *fig. 1 5.*

A tree about 10 m. high, the young branches and the leaves beneath on the midrib and nerves more or less ferruginous-pubescent, otherwise glabrous or nearly so. Branches terete, grayish or brownish. Leaves oblong, coriaceous, brown or brownish olivaceous when dry, somewhat shining, 25 to 35 cm. long, 8 to 11 cm. wide, apex abruptly acuminate, the acumen about 1 cm. long, base subrounded, slightly inequilateral; lateral nerves 10 to 12 on each side of the midrib, very prominent on the lower surface, curved-anastomosing, the primary reticulations prominent, subparallel; petioles 6 to 8 mm. long, stout, somewhat pubescent; stipules oblong-lanceolate, coriaceous, about 1 cm. long, 3 mm. wide. Male flowers white, 3 to 4 cm. in diameter, in axillary few-flowered cymes, the peduncles stout, about 1 cm. long, the pedicels about 1.5 cm. long. Sepals 8, orbicular to obovate, rounded, glabrous, 1.5 to 2 cm. long, the outer smaller than the inner ones. Petals 9 to 12, orbicular to obovate, unequal, 7 to 10 mm. long, 5 to 8 mm. wide, more or less fimbriate, the thick basal scale somewhat pubescent, sulcate, 3 to 4 mm. long, 2 to 3.5 mm. wide. Stamens very numerous, the filaments 1 cm. long; anthers elliptic, 4 mm. long, 3 mm. wide.

British North Borneo, Batu Lima, near Sandakan, *Wood 960*, October 10, 1920. In damp forests at low altitudes. A remarkable species not only in its very large flowers, but also in its numerous sepals and petals. In spite of the fact that the pistillate flowers and fruits are unknown it is clearly a *Taraktogenos*.

Casearia *Jacquin.*

Casearia borneensis sp. nov.

Arbor parva, glaberrima; foliis integris, oblongo-ovatis, utrinque nitidis concoloribus, 12—20 cm. longis, 6—9 cm. latis, subcoriaceis, acute acuminatis, basi acutis, epunctatis, nervis utrinque circiter 8, perspicuis, reticulis confertis, utrinque distinctis; petiolo 1—1.5 cm. longo; fructibus axillaribus, plerisque fasciculatis, ovoideis, 1.8—2.5 cm. longis, pedicellatis.

A small, entirely glabrous tree, the branches terete, smooth. Leaves entire, oblong-ovate, subcoriaceous, brownish-olivaceous and conspicuously shining on both surfaces when dry, subcoriaceous, 12 to 20 cm. long, 6 to 9 cm. wide, apex acutely acuminate, base acute, not punctate; lateral nerves about 8 on each side of the midrib, rather prominent, the reticulations close and distinct on both surfaces; petioles 1 to 1.5 cm. long. Fruits axillary, mostly fascicled, ovoid to oblong-ovoid, dark red when mature, 1.8 to 2.5 cm. long, dark brown and shining when dry, the pedicels about 5 mm. long. Persistent sepals glabrous, 2 mm. long.

British North Borneo, near Sandakan, *Ramos 1167*, *Wood 961* (type), October 20, 1920, *Mrs. Clemens 9499*, December 21, 1915. In damp forests at low altitudes. A species well characterized by being entirely glabrous and in its very entire, strongly shining, densely reticulate leaves.

BEGONIACEAE.

Begonia Linnaeus.

Begonia angustilimba sp. nov. § *Petermannia.*

Herba erecta, suffruticosa, 40—90 cm. alta, partibus junioribus perspicue ciliatis; foliis numerosis, chartaceis, anguste lanceolatis, 10—16 cm. longis, 1—3 cm. latis, acuminatis, basi abrupte rotundatis, leviter cordatis, symmetricis vel leviter inaequilateralibus, margine irregulariter serrato-dentatis spinulosisque; stipulis perspicuis, subpersistentibus, 1.5—2 cm. longis, oblongo-lanceolatis, tenuiter acuminatis; floribus axillaribus, plerumque solitariis, ♂ sepalis 2, obovoideis, 8—10 mm. longis; petalis 0, pedicellis 1.5—2 cm. longis; ♀ breviter pedicellatis; capsulis aequaliter 3-alatis, circiter 8 mm. longis, 11 mm. latis, basi rotundatis, apice subacutis, omnibus partibus perspicue longe ciliatis vel ciliato-setosis.

An erect, simple or sparingly branched, suffrutescent plant, 40 to 90 cm. high, the younger parts rather prominently ciliate with elongated, spreading, brownish hairs, the older stems and branches glabrous, brown, rugose, about 3 mm. in diameter. Leaves numerous, chartaceous, narrowly lanceolate, greenish-olivaceous when dry, shining, the lower surface paler than the upper one, both surfaces sparingly ciliate on the midrib and nerves, or the upper surface glabrous, straight or somewhat falcate, slightly inequilateral, 10 to 16 cm. long, 1 to 2 cm. wide, the apex rather slenderly acuminate, base rather abruptly rounded, slightly cordate, equilateral or somewhat inequilateral, the margin irregularly toothed and spinulose in the upper part, the teeth obscure or wanting in the lower part; lateral nerves sharply ascending, about 5 on each side of the midrib, slender, distinct; petioles ciliate, 2 to 4 mm. long; stipules rather thin, 1.5 to 2 cm. long, oblong-lanceolate, slenderly acuminate, somewhat ciliate, subpersistent. Flowers axillary, solitary or in pairs, white. Staminate flowers: sepals 2, obovate, rounded, sparingly ciliate 8 to 10 mm. long, 6 to 8 mm. wide. Petals none. Stamens
about 35, the anthers obovoid to oblong-obovoid, 1 mm. long, equal-
about 35, the anthers ovoid to oblong-obvoid, 1 mm. long, equalling
ling the filaments in length. Pedicels slender 10 to 12 mm. long, glabrous or very slightly ciliate. Pistillate flowers axillary, solitary, their pedicels about 2 mm. long. Sepals 3, elliptic-ovate, subacute, 6 to 7 mm. long, sparingly ciliate. Capsules equally 3-winged, about 8 mm. long, 11 mm. wide, rounded at the base, the apex subacute, the outer upper angles of the wings subacute or rounded, all parts of the capsule, including the wings, prominently ciliate with elongated, spreading, purplish or brownish setae 2 to 3 mm. in length.

British North Borneo, near Sandakan, *Ramos 1388*, October, 1920. On cliffs and boulders along streams at low altitudes. A species strongly characterized by its narrow, elongated, often somewhat falcate leaves, its persistent large sepals, its axillary solitary flowers, and its conspicuously setose-ciliate capsules.

THYMELAEACEAE.

Linostoma Wallich.

Linostoma pauciflorum Griff. in Calcutta Jour. Nat. Hist. **4** (1844) 234 in nota; Gamble in Jour. As. Soc. Bengal **75** (1912) 261.

Psilaea dalbergioides Miq. Fl. Ind. Bot. Suppl. (1861) 355.

British North Borneo, Sandakan, *Ramos 1799.* In secondary forests at low altitudes. Burma, Malay Peninsula, Sumatra. The genus is new to Borneo.

MYRTACEAE.

Eugenia Linnaeus.

Eugenia sandakanensis sp. nov. § *Jambosa.*

Arbor parva, glabra, ramis ramulisque teretibus pallide griseis, ramulis 2.5 mm. diametro; foliis coriaceis, rigidis, oblongo-ellipticis, 14—17 cm. longis, apice obtuse acuminatis, basi acutis vel decurrento-acuminatis, supra olivaceis, nitidissimis, minute puncticulatis, ad costam perspicue glanduloso-punctatis, subtus pallidioribus, atro-punctatis, nervis utrinque 12—15, subtus perspicuis, rectis, marginalibus perspicuis, leviter arcuatis; inflorescentiis in ramis sub folia, axillaribus, depauperato-cymosis, fasciculatis, vix 1 cm. longis; floribus 4-meris, sessilibus, sub anthesin 1.5 cm. diametro, alabastro obovoideo, 3 mm. diametro.

A small, glabrous tree, the branches and branchlets terete, pale-gray, the ultimate branchlets 2.5 mm. in diameter. Leaves coriaceous, rigid, oblong-elliptic, 14 to 17 cm. long, 6 to 7 cm. wide, subequally narrowed to the acute or somewhat decurrent-acuminate base, and the blunt-acuminate apex, the upper surface olivaceous, strongly shining, minutely pitted, smooth, the midrib, conspicuously glandular-punctate, the nerves slightly impressed, distinct, the lower surface paler, conspicuously black-punctate; lateral nerves 12 to 15 on each side of the midrib, straight, prominent, anastomosing directly with the slightly arched, equally distinct marginal nerves 4 to 6 mm. from the edge of the leaf, the reticulations slender, indistinct; petioles stout, 5 to 7 mm. long. Inflorescences from the branches below the leaves, axillary, composed of very short, few-flowered, fascicled, depauperate-cymose axes 7 mm. long or less. Flowers white, in anthesis about 15 mm. in diameter, the buds obovoid, 3 mm. in diameter, narrowed below into the 1 to 2 mm. long pseudostalk, sessile, subtended by a pair of minute bracteoles. Calyx throat in anthesis about 7 mm. in diameter, the lobes 4, broadly rounded, 2 mm. long, about 4 mm. wide. Petals free, orbicular, punctate-glandular, 4.5 mm. in diameter. Stamens indefinite, their filaments 4 to 5 mm. long.

British North Borneo, Sandakan, *Ramos 1466*, October, 1920. In damp forests at low altitudes. A species closely allied to the Philippine *Eugenia rubronervia* C. B. Rob., differing in its terete branchlets, its longer-petioled leaves, the upper surfaces of which are strongly shining, not dull when dry. The flowers appear to be distinctly larger than in the Philippine species.

Eugenia woodii sp. nov. § *Jambosa.*

Arbor parva, glabra, ramulis teretibus; foliis magnis, coriaceis, oblongo-lanceolatis, 40—60 cm. longis, brevissime petiolatis, apice perspicue acuminatis, basi rotundatis et leviter cordatis, nervis utrinque 40—50, valde perspicuis; inflorescentiis axillaribus terminalibusque brevibus, dichotome ramosis, ramulis brevibus, ultimis circiter 5 mm. longis; calyce infundibuliformi, tereti, circiter 2 cm. longo, et 1 cm. diametro, deorsum valde angustato, perspicue 4-lobato, stylis circiter 3.5 cm. longis.

A glabrous tree about 7 m. high, the branches terete, the ultimate ones 5 to 8 mm. in diameter. Leaves opposite and coriaceous oblong-lanceolate, 50 to 60 cm. long, 9 to 18 cm. wide, the base rounded and slightly cordate, the apex prominently acuminate, the acumen about 3 cm. long, the upper surface grayish or olivaceous when dry, the lower pale; lateral nerves 40 to 50 on each side of the midrib, very prominent, spreading, slightly curved and astomosing with the distinct, slightly arched, marginal nerves, 3 to 5 mm. from the edge of the leaf; petioles very stout, 5 mm. long or less. Inflorescences axillary and terminal, the short peduncle and axis about 2 cm. long, dichotomously branched, the branches short, the ultimate branchlets about 5 mm. long each bearing a single flower which is subtended by 2 small bracteoles. Calyx funnel-shaped, about 2 cm. long, the throat about 1 cm. in diameter, the lower 1 cm. forming a rather narrow pseudostalk, then abruptly widening, the lobes 4, conspicuous; style slender about 3.5 cm. long.

British North Borneo, Bettotan Watershed, *D. D. Wood 688* (type), June 5, 1919, in flat forests, altitude about 20 meters; Batu Lima and Sebuga near Sandakan, *Ramos 1262, 1803, 1804,* October and December, 1920, in forests at low altitudes. A remarkable species strongly characterized by its elongated, numerously and conspicuously nerved leaves which are slenderly acuminate at their apices and narrowed below to the rounded and slightly cordate bases, as well as by its short inflorescences and its calyx characters.

Eugenia palawanensis C. B. Rob. in Philip. Jour. Sci. **4** (1909) Bot. 377.

British North Borneo, Labuk Bay *D. D. Wood 677,* March 30, 1919, in flat forests at low altitudes. Previously known only from Palawan.

Myrtus Linnaeus.

Myrtus moultonii sp. nov.

Frutex, ramulis floribusque exceptis glaber; ramulis minute glanduloso-verruculosis; foliis numerosis, alternis, oppositis vel quaternis, crassissime coriaceis, ellipticis, utrinque rotundatis, 4—6 mm. longis, margine revolutis, nervis obsoletis, subtus glanduloso-punctatis; floribus axillaribus terminalibusque, solitariis vel confertis; calycibus cinereo-pubescentibus, lobis 4, ovatis, 1.5 mm. longis. acutis; petalis orbiculari-ovatis, stipitatis; staminibus circiter 30, 5—6 mm. longis.

A shrub, the branchlets, pedicels, and calyces somewhat cinereous-pubescent, the branches stiff, elongated, covered with somewhat shaggy, brownish or grayish bark, the younger ones somewhat glandular-verruculose. Leaves very numerous, alternate, opposite, or sometimes in verticils of 4, thickly coriaceous, elliptic, 4 to 6 mm. long, 2.5 to 4 mm. wide, rounded at both ends, the margins revolute, the upper surface dark-olivaceous, smooth, shining, the lower surface paler, prominently glandular-punctate, the midrib impressed on the upper surface, usually prominent on the lower surface, the lateral nerves and reticulations obsolete; petioles about 1 mm. long. Flowers in the upper axils and crowded at the tips of the branchlets, their pedicels 1 to 2 mm. long; bracteoles 2, subtending the calyx, narrowly oblong, glandular-punctate, slightly pubescent, up to 1.5 mm. long. Calyx tube about 2 mm. long, pubescent, rugose when dry, narrowed below, the lobes 4, ovate, subcoriaceous, glandular-punctate, subacute, about 1.5 mm. long. Petals suborbicular-ovate, membranaceous, reticulate and glandular-punctate, the limb about 2.5 mm. long, the claw 1 mm. in length. Stamens about 30 in one row, the filaments slender, 5 to 6 mm. long, bent inward in bud. Ovary 3-celled; ovules numerous.

Sarawak, Upper Baram, Gunong Temabok, *Major J. C. Moulton 6747*, November 2, 1920, altitude about 2100 m. The third species of the genus to be found in Borneo; among the species familiar to me most closely allied to *Myrtus rufopunctata* Panch. of New Caledonia.

MELASTOMATACEAE.

Melastoma Linnaeus.

Melastoma laevifolium sp. nov.

Frutex erectus, circiter 2 m. altus, obscure et parcissime strigillosus; ramis ramulisque tenuibus, teretibus, ramis glabris, ramulis rubro-brunneis, paleis adpressis minutis sparsis obscuris instructis vel sublaevibus; foliis lanceolatis, coriaceis, rigidis, 4—9 cm. longis, acuminatis, basi acutis, 3-nerviis, supra olivaceis, laevibus, parcissime strigillosis, subtus viridibus, sublaevibus, paleis minutis paucis instructis; floribus terminalibus, solitariis, 5-meris, calyci obscure parceque paleaceo, paleis ovatis acutis adpressis vix 0.5 mm. longis instructo, lobis latis, brevibus, circiter 2 mm. longis; antherarum majorum connectivo basi longe producto.

An erect shrub about 2 m. high nearly glabrous throughout, the branches and branchlets terete, smooth, the ultimate branchlets reddish-brown, 1.5 mm. in diameter or less, supplied with very few widely scattered, appressed, ovate scales about 0.2 mm. long. Leaves lanceolate, coriaceous, rigid, 4 to 9 cm. long, 1 to 1.5 cm. wide, narrowed upward to the acuminate apex, the base acute, 3-nerved, the upper surface olivaceous, somewhat shining, smooth, obscurely and very sparsely strigulose, the lower surface paler and with few widely scattered, minute, appressed scales similar to those on the branchlets, the midrib, nerves and reticulations reddish in contrast with the greenish surface; petioles slender, 7 to 10 mm. long, with very few minute, appressed scales. Flowers terminal, solitary, 5-merous, their pedicels about 1 cm. long. Calyx about 1 cm. long, subcylindric, acute at the base, about 8 mm. in diameter, the lobes short, broad, subobtuse, about 2 mm. in length, the pedicels, tube, and lobes supplied with minute, appressed, widely scattered, triangular-ovate scales 0.5 mm. long or less. Petals oblong-obovate, about 3 cm. long, 1.5 cm. wide, narrowed below to the subacute base, the apex acute or somewhat obtuse. Stamens unequal, the filaments of the shorter ones 9 mm. long, their anthers curved and about as long as the filaments, the longer filaments 12 mm. in length, their anthers linear-lanceolate, curved, about 1.5 cm. long, the connectives produced about 14 cm., 2 appendiculate, the appendages stout, 2 mm. long. Top of the ovary produced, about 2 mm. long around the base of the style and conspicuously ciliate.

British North Borneo, Sandakan, *Ramos 1132,* September, 1920. In thickets near the seashore. A species perhaps most closely allied to *Melastoma nitidum* Zoll.; differing, however, in numerous characters. In the genus it is well characterized by being nearly smooth and glabrous, the scales on the branchlets, petioles, pedicels, calyces, and leaves being inconspicuous, minute, and widely scattered, the upper surface of the leaves being entirely glabrous.

Dalenia Korthals.

Dalenia pubescens sp. nov.

Frutex scandens, ramulis et inflorescentiis et subtus foliis perspicue ferrugineo- vel cupreo-stellato-pubescentibus; foliis orbiculari-ellipticis vel ellipticis, 20—27 cm. longis, coriaceis, basi late rotundatis, 7-nerviis, apice truncato-rotundatis vel acutis, perspicue abrupteque apiculato-acuminatis, supra glabris, nitidis, subtus ferrugineo-pubescentibus; paniculis usque ad 1 m. longis; floribus numerosis; alabastro cylindrico, 1.5 cm. longo; calyce calyptraco, calyptra acuta, 5 mm. longa; petalis 4, ovatis, acuminatis, 5 mm. longis; staminibus fertilibus 4, antheris oblongo-lanceolatis, obtusis, appendicibus ovatis, membranaceis, 0.5 mm. longis, sterilibus 4, minoribus, appendicibus anterioribus lineari-lanceolatis, lateralibus 2—3 mm. longis, interioribus 5—6 mm. longis.

A scandent shrub, the branches frequently emitting rootlets, the younger parts, inflorescences, and the lower surface of the leaves conspicuously ferruginous- to cupreous-stellate-pubescent. Branches terete, 5 to 7 mm. in diameter, the ultimate branchlets sometimes compressed or somewhat angular. Leaves opposite, orbicular-elliptic to elliptic, coriaceous, 20 to 27 cm. long, 15 to 18 cm. wide, base broadly rounded and sometimes shallowly cordate, apex truncate-rounded to acute and conspicuously and abruptly apiculate-acuminate, the acumen narrow, up to 7 mm. long, the upper surface greenish-olivaceous, shining, glabrous, the lower surface ferruginous, minutely and densely stellate-pubescent; basal nerves 7, the inner two pairs reaching the apex of the leaf, somewhat impressed on the upper surface, very prominent on the lower surface, the transverse nerves subparallel, conspicuous; petioles stout, densely stellate-pubescent, 2.5 to 3 cm. long. Panicles terminal, peduncled, up to 1 m. long, the branches opposite, spreading, the lower ones up to 10 cm. in length, all parts ferruginous- to cupreous-stellate-pubescent. Flowers numerous, their pedicels about 1 cm. long. Calyx, in bud, cylindric, about 15 cm. long, 5 mm. in diameter, glabrous or very slightly pubescent, the sepals entirely united into a deciduous cone, the cone acute, about 5 mm. long. Petals 4, glabrous, ovate, acuminate, about 5 mm. long. Stamens 8, 4 fertile, the filaments flattened, 2.5 to 3 mm. long; fertile anthers oblong-lanceolate, obtuse, 6 to 7 mm. long, the connectives not produced, the appendages ovate, membranaceous, 0.5 mm. long, 1 dorsal and 2 anterior; sterile anthers oblong-lanceolate, 2 mm. long, the dorsal appendage oblong-ovate, acute, membranaceous, 1 mm. long, the anterior one linear-lanceolate, 2 to 3 mm. long. Ovary 4-celled, style 4.5 mm. long. Fruits somewhat urceolate, truncate, glabrous or slightly pubescent, about 1 cm. long.

British North Borneo, Kiau, Mount Kinabalu, *Mrs. Clemens 10301* (type), December 4, 1915; Batu Lima, near Sandakan, *Ramos 1585*, November 5, 1920, in damp forests along small streams. *Dalenia*, up to the present, has been represented by a single known species, *D. pulchra* Korth., of Borneo. The present species differs from the type of the genus, not only in its pubescence, the type being almost glabrous, but also in its floral characters. In fact, the staminal characters are so different in the present species from those of the type of the genus that *D. pubescens* might, with considerable propriety, be made the type of a distinct genus. In *D. speciosa* the stamens, while dissimilar, are all fertile, the larger ones bisetose anteriorly and calcarate posteriorly, the connectives of the smaller anthers bituberculate anteriorly and very shortly calcarate exteriorly. In the present species, the fertile stamens are merely supplied with 2 membranaceous, ovate scales anteriorly, and a single similar one exteriorly, while the sterile anthers are supplied dorsally with a very short scale, and ventrally by two lateral and one central thin, elongated appendages. In the size and shape of its leaves, in its habit, that is, the stems producing roots along the internodes, and in its calyptrate calyx, it is very similar to Korthals's species. The floral characters of the present have been worked out from nearly mature buds; they may be subject to slight modifications when open flowers are available.

Dissochaeta *Blume.*

Dissochaeta ramosii sp. nov. § *Diplostemones.*

Frutex scandens, partibus junioribus et inflorescentiis et subtus foliis ferrugineo-stellato-pubescentibus; foliis oppositis, ellipticis vel elliptico-ovatis, chartaceis, 9—12 cm. longis, supra glabris, nitidis, basi rotundatis, 5-nerviis, nervis marginalibus tenuibus, apice acuminatis; inflorescentiis axillaribus terminalibusque, cymosis, bracteis lineari-lanceolatis, 3 mm. longis; calyce 1.5 cm. longo, 1 cm. diametro, basi cuneato, lobis 4, brevibus, latissimis, rotundatis; petalis circiter 2 cm. longis; staminibus 8, filamentis 1.6 cm. longis, antheris majoribus 2.5 cm. longis, utrinque longe angustatis, setiformibus, 9 mm. longis, antheris appendiculatis minoribus sigmoideis.

A scandent shrub, the branchlets, petioles, inflorescences, and the lower surface of the leaves rather densely ferruginous-stellate-pubescent. Leaves opposite, elliptic to elliptic-ovate, chartaceous, 9 to 12 cm. long, 4.5 to 6 cm. wide, the upper surface greenish, shining, glabrous or nearly so except the somewhat pubescent midrib, the lower surface ferruginous or brownish and conspicuously pubescent with scattered stellate hairs, base usually rounded, not at all cordate, 5-nerved, the marginal nerves more slender than the inner pair, the apex distinctly acuminate; transverse nervules prominent on the lower surface; petioles densely stellate-pubescent, 1 to 2 cm. long. Inflorescences axillary and terminal, peduncled, cymose, the axillary ones up to 7 cm. long, the terminal ones 10 cm. long, sometimes supplied with greatly reduced leaves, the bracts linear-lanceolate, about 3 mm. long, the peduncles, pedicels, and calyces very densely stellate-pubescent with ferruginous or brownish hairs. Calyx about 1.5 cm. long, base cuneate, the throat about 1 cm. in diameter and with 4, very short, broad, rounded lobes. Petals white, glabrous, elliptic-obovate, rounded, about 2 cm. long, 1.2 cm. wide, more or less narrowed to the subacute base. Stamens 8, their filaments about 1.6 cm. long, the 4 longer anthers 2.5 cm. long, rostrate, much narrowed at both ends, the connectives not produced, the anterior appendages setiform, about 9 mm. long; shorter anthers sigmoid, the apical rostrate part recurved, the anterior appendages similar to those of the longer stamens.

British North Borneo, Sebuga, near Sandakan, *Ramos 1758*, December, 1920. In open forests at low altitudes. A species most closely allied to *Dissochaeta punctulata* Hook. f., from which it differs especially in its much larger flowers and longer petioles and anthers.

Kibessia *DeCandolle.*

Kibessia verrucosa sp. nov. § *Eukibessia.*

Arbor glabra, 4—7 m. alta, ramis ramulisque teretibus; foliis chartaceis vel subcoriaceis, ellipticis vel oblongo-ellipticis, subolivaceis, nitidis, 15—22 cm. longis, utrinque subaequaliter angustatis, basi acutis, 3-nerviis, apice obtuse acuminatis; inflorescentiis axillaribus terminalibusque, subcymosis, 1—2 cm. longis; calycis tubo truncato, 6—7 cm. longo, 5 mm. diametro, perspicue verruculoso, haud setoso, calyptra 5—6 mm. longa, acuta; petalis 4, obovatis, acutis, 6—7 mm. longis; fructibus obovoideis, truncatis, 1 cm. longis, leviter verruculosis, verruculis subplanis, pentagonis, 1.5 mm. diametro.

An entirely glabrous tree 4 to 7 m. high, the branches and branchlets terete, smooth, usually brown, the ultimate branchlets about 2 mm. in diameter. Leaves chartaceous to subcoriaceous, elliptic to oblong-elliptic, subolivaceous, shining on both surfaces, the lower surface somewhat paler than the upper, 15 to 22 cm. long, 6 to 11 cm. wide, subequally narrowed to the acute and prominently 3-nerved base and to the blunt-acuminate apex; midrib and basal nerves somewhat impressed on the upper surface, very prominent on the lower surface, the longitudinal nerves reaching the apex of the leaf, a very faint pair of marginal nerves usually present, situated 1 to 2 mm. from the edge of the leaf, these not more prominent than are the primary reticulations; petioles rather stout, 5 to 8 mm. long. Inflorescences axillary and terminal, solitary or fascicled, subcymose, 1 to 2 cm. long, few-flowered. Calyx tube cup-shaped, truncate, 6 to 7 mm. long, about 5 mm. in diameter, rather conspicuously verrucose but not at all setose, the conical apical portion formed by the wholly united sepals 5 to 6 mm. long, acute, deciduous. Petals apparently pale-blue, obovate, acute, inequilateral, 6 to 7 mm. long. Stamens 8, the anthers about 2.5 mm. long, inappendiculate. Fruits somewhat obovoid, truncate, about 1 cm. long, slightly verruculose, the verruculae plane, scarcely or not at all elevated, pentagonal, about 1.5 mm. in diameter.

British North Borneo, Batu Lima and in the vicinity of Sandakan, *Ramos 1722* (type), *1191*, *Villamil 147*, *Agama 463*; flowering in November, fruiting in August, October, and February. In forests at low altitudes. A species in its calyx characters apparently approximating *Kibessia teysmanniana* Cogn., but with entirely different vegetative characters. It is easily recognizable by its elliptic to oblong-elliptic leaves which are subequally narrowed at both ends and by its verruculose calyx tube which is not at all setose, the verruculae being plane or nearly so, sometimes slightly elevated in their central portions.

Clidemia *D. Don.*

Clidemia hirta (Linn.) D. Don in Mem. Wern. Soc. **4** (1823) 309; Cogn. in DC. Monog. Phan. **7** (1891) 986.

Melastoma hirta Linn. Sp. Pl. (1753) 390.

British North Borneo, Sandakan and vicinity, *Clemens 9464,* October, 1915; *Yates 3,* October, 1917; *Castillo 590,* January, 1918, on slopes near the sea; *Foxworthy 604,* January, 1916, at the base of sandstone cliffs; *Wood 766, 848,* May, 1920, on ridges; *Ramos 1134,* in thickets and along small streams. This American species is thoroughly naturalized in the vicinity of Sandakan as it is in Singapore and in Java.

Pachycentria *Blume.*

Pachycentria constricta Blume in Flora **14** (1831) 520; Cogn. in DC. Monog. Phan. **7** (1891) 608.

British North Borneo, Batu Lima near Sandakan, *Ramos 1163.* On trees in forests at low altitudes. Java.

ALANGIACEAE.

Alangium *Lamarck.*

Alangium borneense sp. nov. § *Marlea.*

Arbor circiter 15 m. alta, ferrugineo-pubescens; foliis subcoriaceis, oblongis, acuminatis, 15—23 cm. longis, basi rotundatis, supra glabris, subtus ad costam nervosque pubescentibus, nervis utrinque 10—14, perspicuis; cymis axillaribus 3—7-floris; calyce 10-sulcato, truncato; stylis sursum incrassatis, apice perspicue 3-lobatis, lobis papillatis, 2.5 mm. longis.

A tree about 15 m. high, the branches, branchlets, and inflorescences densely ferruginous-pubescent. Leaves subcoriaceous, oblong, 15 to 23 cm. long, 6 to 9 cm. wide, pale brown when dry, sharply acuminate, base rounded, the upper surface glabrous, the lower pubescent on the midrib and lateral nerves; nervis 10 to 14 on each side of the midrib, prominent, curved, the reticulations subparallel; petioles pubescent, 1 to 1.5 cm. long. Cymes axillary, pubescent, 3- to 7-flowered, including the flowers 4 to 5 cm. long. Calyx pubescent, about 6 mm. long, prominently 10-sulcate, the limb somewhat spreading, about 4 mm. in diameter, truncate, or very shallowly and obscurely toothed. Petals 5 or 6, linear-lanceolate, coriaceous, densely pubescent, 2 cm. long, 2.5 mm. wide. Stamens 5 or 6, about 1.6 cm. long, the filaments somewhat flattened. Style about 1.5 cm. long, thickened upward, narrowly club-shaped, appressed-pubescent; stygma distinctly 3-lobed, the lobes ovate-lanceolate, papillate, 2.5 mm. long.

British North Borneo, Batu Lima, near Sandakan, *Agama 1022* (type) *Ramos 1451,* November 1920, on steep damp forested slopes, altitude about 70 m. A species allied to *Alangium vitiense* (A. Gray) Harms var. *tomentosum* Benth., differing notably in its very much larger leaves, much larger flowers, prominently sulcate calyces, and 3-lobed styles.

A Murut Vocabulary.

By the late N. B. Baboneau.
With an Introductory Note
By G. C. Woolley.

The following Murut Vocabulary was compiled by the late Mr. N. B. Baboneau, an Officer in the British North Borneo Service from February 1910 to December 1921, and was found amongst his papers after his death. The original is carefully typewritten, and has been revised, as there are numerous pencil additions and corrections in the text. I do not know, however, whether Mr. Baboneau considered that it was now as complete as he intended it to be. Probably not, for further research would doubtless reveal many native terms in place of the Malay or semi-Malay forms here given.

The only 'introduction' is a pencil note on the fly-leaf "A Murut Vocabulary compiled with the help of various Keningau Muruts, intelligent and otherwise, between the years 1911 and 1914. N. B. B. Rundum 1914."

The name 'Murut' though now generally adopted and understood, was not originally used by the people themselves, but was given by Brunei Malay and other Coast people to the inhabitants of the hills and Interior of this part of the country. The 'Murut' districts are Keningau, Tenom and the greater part of Pensiangan or Rundum Districts of the Interior, the lower Padas and Bukau rivers in Beaufort District, and the greater part of Province Clarke, which includes the Lakutan and Mengabong rivers and head waters of the Padas.

So far as I am aware, no ethnologist has yet classified the various tribes in this area, but we can perhaps distinguish four main tribes, though the number of petty subdivisions, with small variations of dialect, is very large. A Murut, if asked his race, would probably not state to which main tribe he belonged, but would give his local subdivision, generally a geographical description, according to the river on which he or his people lived, *e.g.* that he was a Tomani or Siliu man, *i.e.* that he lived on the Tomani or Siliu river or that he was a 'Keningau Murut.'

As the country has got more peaceful under European Government, raiding has died out and intercourse has become more free, tribual boundaries have tended to become obscured, and probably dialectical variations of language have become less accentuated, but a general distribution of tribes can still be given.

Jour. Straits Branch R. A. Soc., No. 86 1922.

In the Western hills of Keningau District are the Kwijaus, a semi-Dusun, semi-Murut tribe. On Keningau plain are the 'Dabai': in the East, in the upper Sook, are the Bokan tribes (probably closely related to Peluan).

Peluan tribes are found in the Dalit and Mesopo and Karamatoi districts and the head-waters of the Telankai and Penawan rivers *i.e.* the S. E. part of Keningau and the N. of Pensiangan, with a sub-tribe called Belarun ("Bladun country" on small maps) and from there across Tenom district to the Mengalong and Lakutan rivers of Province Clarke and the River Bukau of Beaufort. Timugun tribes are found in the northern part of Tenom plain, on the Pegalan river, and there are also few in Beaufort.

The Semambus are a more important branch, and stretch from the S. E. part of Pensiangan, (when they meet with the 'Sakais' of Dutch Borneo, related to the Tidongs of Bulongan) through the Tagul, Siliu, Rundum, Selalir, Telecosan and Tomani rivers, across the Padas to Bole; and perhaps to Lawas in Sarawak. At Bole, the people call themselves 'Tagals' and when I was District Officer Province Clarke I do not recollect hearing them use the name Semambu of themselves: their dialect however is similar, and a Policeman who has learnt 'Murut' at Bole is soon quite at home amongst Pensiangan people.

Besides these, in Province Clarke, there were some settlements of people who called themselves 'Kolor' 'Okolor' 'Unkolor' and said they came from Dutch rivers south of the Selalir, and, in the extreme ulu Padas the 'Undaio' or 'Lundaio' (? = Ulun Daio, 'Dyak men') who were closely related to the 'Muruts' of the upper Limbang and Trusan rivers of Sarawak, and appeared to be very distinct in type and language, from either the 'Tagals' or 'Kolor.'

For practical purposes therefore, I omit Kuijaus, as not being a pure race and the Lundaio, as being of Dyak kin, and classify our 'Muruts' as Dabai and Timugun on the plains, with Peluan and Semambu as Hill tribes.

In conclusion, it may be of interest to give a few illustrations of dialect variations. Several letters appear to be commonly interchanged, and these differences in pronunciation and spelling offer a considerable obstacle to any attempt to make a satisfactory or concise Murut-English Vocabulary. A Native, if questioned whether *e.g.* 'baguh' or 'waguh' is correct, will often say 'either will do.' though whether he means that each form is in use in one or other of the dialects or that your hearer would catch your meaning and excuse your ignorance of his language, is open to doubt.

The Keningau dialect, as given in this vocabulary, seems very fond of initial 'm' which is often absent in the ulu Padas (Semambu).

(K = Keningau. T = Timugan. S = Semambu).

e.g. cold K. 'mesimoh': S. asimoh.
afraid K. 'malâh': S. alâ.
before K. 'garing': T. galing. (S. understands 'galing' but generally says 'nagulu' and 'naling' in Semambu is 'behind.')
brother K. harih T. and S. halih
between K. dolut T. and S. lolut
sharp K. malais S. apais
sharp K. meladum T. melarum S. alarum
woman K. doando T. roando S. roando
rain K. domassam T. &. P. rasam S. unguluh
right (not left) K. pemidis S. pamiris
good K. mainseu S. unsoi or ătâr
small K. mebodok T. beloroh S. brook
wicked K. merâht S. alaat
many K. mamok S. aramak or asuang
night K. mundum S. lundum
sleep K. molong S. olong
sun K. odoh S. ŏro or tolok
hot K. melassu S. alasu
swim K. nadusoh T. nadisoh S. narisoh
your K. maguap T. maguab

The Semambu dialect varies slightly on different rivers, but whereas Dabai, Peluan and Timugun are fairly closely related to each other, Semambu is much more distinct: though an untravelled Semambu man placed in Keningau could still gather roughly what was being said. Some common words are quite different, *e.g.* 'quickly' K. keribok, S. kapasiun: angry K. mangit, S. ambok: cloud K. dutoh or gaun, S. laput or gaun: Indian corn K. budit, S. sangun or dalai: long ago K. nakalaid, S. alair or awhoi: pig K. bawih, S. biag: skin K. kulit, S. kongkong.

The final 'K' in this vocabulary is nearly mute.

(sd.) G. C. Woolley.

Numerals.

1	sa, dundoh.
2	duoh.
3	taloh.
4	apat.
5	limoh.
6	enom.
7	turok.
8	baloh.
9	siam.
10	mopod.
11	mopod om dundoh.
12	mopod om duoh.
20	duongopod.
21	duongopod om dundoh.
25	duongopod om limoh.
30	talongopod.
35	talongopod om limoh.
40	apatnopod.
50	limongopod.
60	onom'ngopod.
70	turongopod.
80	balongopod.
90	siam'ngopod.
100	matus.
125	matus duongopod om limoh.
200	duongatus.
300	talongatus.
350	matus limongopod.
400	apatngatus.
500	limongatus.
600	onom'ngatus.
678	omom'ngatus torongopod om baloh.
700	turongatus.
729	turongatus duongopod om siam.
800	balongatus.
900	siam'ngatus.
930	siam'ngatus talongopod.
1,000	salîong.
5,000	limongalîong.
10,000	mopod nalîong.
once	igundoh.
twice	induoh.
3 times	intaloh.
4 times	inggapat.
5 times	indimoh.
6 times	inggonom.
7 times	inturok.
8 times	imbaloh.
9 times	insiam.
10 times	inggopod.
20 times	induongopod.
30 times	intalongopod, &c.
100 times	inggatus.
how many times?	inkurra? "inkurra ioh saboi?" (how many times did he come?)

A.

a (*of small, round things*), dundoh: (*of animals*) sanginan: (*of trees*) sampohun: (*of sheets of paper, cloth, &c.*) sampilah.

abandon to, pauantan binantan, pinoantah: "magigidoh iroh, pauantan noh pagun nanoh": they ran away and abandoned their village.

able, pandei, mapandei, makadapat.

about, korah korah.

above, disawat, tumampak.

abscond to, magidoh.

absent, kandok, kaiioh.

abundant, mamok.

abuse, maguras.

accept, makiupah.

accustomed, maindaram, nobas.

acknowledge, (*M*) menakun.

across, sendipag, senihkuad: senihkuad susungoi, across the river: senihkuad tidong, beyond the hill.

active, mepinit.

add, doangih.

admit (confess), (*M*) kenakun: (to let in) makasubul, (*imper.*) pasubuloh: "sukabi urubun pasubuloh assuh ih," open the door and let in that dog.

adopted child, tinangkanak.

adorn oneself, membuas.

adultery to commit, memalapoh: lapauluiok, to have intercourse with a person immediately after the death of one's husband, or wife.

afraid, malâh: mataloh, a coward.

afternoon, merundom.

after, afterwards, taurih.

age, tuh.

agent, (*M*) wakil.

agile, mepinit.

ago, long, nakalaid noioh.

agree, make an agreement with, (*M*) janji.

ahead (*in front*), magagulu.

aim at, turok, menurok.

alike, nagundoh.

alive, tinambiag: biag.

all, ngai ngai.

allow, gamah: 'gamah doginu,' = (*M*) 'Biar-lah bagitu.'

almost, memad.

alone, dundoh dundoh.

also, tupoh.

always, masarok.

ambush, lie in, magawang.

amok to, temobok.

ancestors, pengadu.

and, am, om.

angry, mangit: inangitan, to incur anger.

animal, (*M*) binatang.

ankle, buningal: bulingkus, an anklet.

annoy, anjahan.

annoyed, medual goang.

another, bokun: Atoiennuh bokun-ih, where are the others?

answer to, magagual, manjajawab.

ant, kilau: red ant, 'labus burong': lit. 'let go one's parang' (on account of the pain): white ant, (M) anai: the soldier ant, kalipodus bawang: (because bears eat their nests).

ant-hill, punchu.

antidote, dawar.

apart, nataiad.

appearance, bansa.

approach to, datong, datong memad.

are (is), makondoh.

arm the, langan.

arm (*weapon*), anîban.

armed, mokondoh anîban.

armadillo balukun: **-hide,** sisih.

armpit, kapilok.

around, domipud.

arrange, mongusai.

arrest, memerakab.

arrive, somaboi, makasaboi.

ascend, tomakad: tomakad tidong, to climb a hill: tumun om tomakad, up and down hill.

ashamed, moiuh.

ashes, kauh.

ask (*inquire*), mengimuat, imuaton.

ask for, mikianih.

assemble, menimpong.

assist, indangan.

astonished, metambungoh: 'metambungoh aku monginingdoginu': I am surprised to hear that.

at, du, tio du.

atap (*of a house*), tap: menarut, to sew ataps.

attack, memalambah, nakatuntuloi: (*of animals, with the teeth*) sinâm, menâm: (*with the horns, as a buffalo*) menangau.

attempt, iri, mengiri.

authority, (*M*) kuasa: ulun maiioh, a chief.

avenge to, sumulih.

awake (*trans.*), mengadat, kadatoh: (*intrans.*), kumalat.

axe, (*M*) kapak: Panah, a small hatchet, a 'beliong.'

B.

baby a, daragang.

back the, bakorong.

bad, meraht.

bad-tempered, marigogut, masarok mangit.

bait, upan.

balance (*the remainder*), noantai.

bale to (*a boat*), mengîas: (*imper.*) iasih.

bamboo, tembalang, paring, sumbiling: tembalang, the small-leaf bamboo, used in making hedges, &c.: sagoh, a piece of bamboo, for carrying water, also to take water from a stream.

banana, punti.

bank of river, king susungoi.

bargain to, (*M*) tawar.

bark to, menyusig.

bark of tree, kulit tetaun.

barrel of a gun, berongon.

barren (*of females*), mawaluih.

barter to, magalid.

basket, paiauan: bongun, a receptacle made of bark, used for carrying goods on the back.

bastard a, anak pungoh.

bat, pongit.

bathe to, madioh.

beads, sesigut: bungkas, long, oval-shaped beads: bebungal, round, white beads: manudirau, (lit. 'bright') tinsel, yellow or red: Agoh agoh, small white beads: Agih, long, octagonal.

beak a, tinduk.

beam a, tetaun: sumuloi, the beam under the floor of a house, a girder: pakang, the beam under the roof, a rafter.

bean a, blatong.

bear a, bawang.

bear (*to endure*), tomahan.

bear (*give birth*), maganak.

beard, jarub.

beast, (*M*) binatang.

beat to, memalambah: (*v. to hit*): (*of the pulse, &c.*) kibut kibut.

beautiful, mainseu: (*of persons*) mapasau, mainseu.

because, kosoi, (*M*) sebeb.

become, mawâl, (*M*) makajadi.

beckon to, kapoiun.

bee, meningot.

beetle, tapih: limunod, the large boring beetle.

before (*in front of*), gintuong, gintuongan: cf. 'mentudong nuh talikudan, kai mentudong du gintuongan ku': stand behind me, not in front of me: (*of time*) garing. "akiah kai koh nomarah du garing ih?" (why did you not tell me before?)

beg to, mikianih.

begin to,, menimpun: impun, at first.

behind, talikud, talikudan.

belch to, magilub.

believe, mintopud, malansan: kai kalansan disoh magambut, do not trust him, he is lying.

bell, karing: kinaringan, a parang or belt adorned with bells.

belly, tinai.

belt, (*M*) tali pinggan.

bend, bent, mapikul.

beside, tabibikan.

bet to, mentatahan.

betel-nut, kusob: magintat, to chew betel-nut.

betrothed, manunang: moipanudang, to ask in marriage.

between, dolut, (*M*) tengah: cf. 'tengah tengah nuh Keningau Tenom om Tambunan.

beyond, senihkuad.

bewitched, punan.

big, maiioh, makaluh.

bind (*e.g. a wound*), bawodun.

bird, sesirak.

bird lime, pulut.

birds' nest, tambunan.

birth (*give birth to*), maganak.

bite to, kinokut, manokut: (*of a snake*) menindok, tindokun.

bitter, mosum.

black, mahitam.

blade (*of a weapon*), ladam: pagong, the blunt edge: ladam, the sharp edge, or the whole blade: utin, the part of the blade that goes into the handle.

blaze to, (*of a fire*), malang: *to blaze a tree,* mebatin: mebatin dalan, to mark a path by blazing trees.

blear-eyed, mankudarudab.

bleed to, makadâh.

blind, mumbulau: nohlusuan, blind in one eye.

blister, mampulalak: palakak, a blister on the sole of the foot, the 'puru.'

blood, dah.

blossom, a busak.

blossom to, menyakah, memukakah.

blow to, simpui, menimpul: the nose, magingsingor.

blowpipe, sapok: menyapok, to shoot with a blowpipe: sinapok, to be shot with a blowpipe.

blue, tumau.

blunt (*of an edge*), ka malais: (*of a point*) ka maladum.

board a, pinapapan, (*M*) papan.

boast to, makiumpod: cf. '*Makiumpod ioh di nakalap du ulu*': he boasted that he had taken a head.

boat, padau.

body, inan.

boil to, (*trans.*), mangsak: (*intrans.*), dumidih, menimbual.

boil a, tupas.

bone, (*M*) tulang.

bore the ears to, mentobok.

borrow, midah, ideh.

both, duoh duoh.

boundary, dolud, paboboitan.

bow to, kumong.

bow the, (*of a boat*), julong.

bowl, sarogong.

box, (*M*) kaban: tiduan, a small box, made of bamboo.

bracelet, dinoleh: bulingkus, an anklet.

brains, otok.

branch (*of a tree*), (*M*) dahan: (*of a river*) siang: (*of a path*) suriangan: (*of the horns of a deer*) mandân.

brass, sensaring.

brave, banih.

bread, (*M*) roti.

break, mabak, mapandak, mapotoh: (*to snap*) mokat: = (*M*) 'putus.'

breast, kubab, titih.

breath, peniaw: *out of breath,* ingus ingus.

breathe to, meminyawa.

bribe, (*M*) suap: Menakan suap, to take a bribe.

bridge, apad.

bright, manudirau.

bring to, naibit: (*imper.* ibitoh.)

bring up (*to rear*), piarahan.

broad, mapilah.

brother, pabukat: Akak, elder brother: harih, younger: in-law, magawang.

bruise a, rumutom.

brush to, isasin.

brush a, (*M*) bros.

buffalo, (*M*) kerbau.

bullet, (*M*) peluru.

build to, memâl.

bunch (*of fruit*), sampungoh, pungoh: (*of coconuts*), sampapah.

burn to, mesurob, moboh: oneself, melinseu: melinseu karindoh, to burn one's finger.

burnt (*of wood &c.*), udus.

burst to, lumapat.

bury to, nalobong.

busy, mainsoh-insoh, mamok kreja.

but (*not used*).

butt to, menangau.

butterfly, kuliambang: kapuh, patatuding: different kinds of butterflies (unidentified).

buy, memalih.

C.

cactus the, dawar, *lit. 'antidote,' (against certain kinds of sickness.)*

calculate, mengiap, iapun.

calf, (*M*) anak sapi.

calf (*of leg*), tonok: lukabab, the upper part of the calf, behind the knee.

call, menimpag: (*imper.*) impagoh: mengorok, to call fowls: mempanad, to call dogs: memalangik, to call kijang, (with a leaf or bamboo).

call in at, mapid.

calumniate, mamitanah: cf. 'magambut kau, mamitanah kau daki': you are lying, you are slandering me.

camphor, kuyong.

can, (*M*) pandei, mapandei, makadapat.

cannon, (*M*) badil.

care to, paduli.

care (*take care of*), piara: (*'take care!'*), ilai!

carefully, terandah: onggoiok terandah, (hold it carefully).

carve, senihkakalaing.

carry, magibah: (*on the head*) patadungon: (*on the shoulder*) sahnin: (*in the arms*) bebilun.

cash, dusin.

castrate, intalinin.

cat, kungau, ungau: ampu, a species of tree tiger, often found in Keningau district: munin, the civet, 'musang.'

catch to, memerakob, narakob: menigot, to catch a buffalo &c. with a noose, (sarigut); to lasso: (*kena*) makonoh, maintupan.

caterpillar, ulod.

cattle, (*M*) sapi.

caught to get, (*menyangkut*) mesalong.

cease, tumuloh, tomangus.

centipede, dipal: anak dipal, the luminous millipede.

centre, (*M*) tengah.

certain, topud, kepioh.

certainly, (*M*) tentu, topud.

chaff (*of grain*), apol.

chain, (*M*) rantei.

chair, (*M*) krosih.

change to, magalid, pagalid: one's clothes dumalin.

channel (*a passage*), otusan.

charm a, dawar.

charred (*of wood*), udus.

cheap, memurah.

cheat to, menipu, memusing.

cheek the, bingal, ilan.

chest the, kubab.

chew (*betel-nut*), magintat.

chief a, maiioh, ulun maiioh.

child, dalaing: darangang, an infant.

chin, saludah.

chilly, mesimoh: mesimuan, to shiver with cold.

clipped (*of a blade, &c.*), mapirang.

choke to, kadanan.

choked up (*as a blowpipe*), matitan: (*as a ditch or stream*) masukong.

choose to, (*M*) pileh.

chop, potul.

cicada, bintakar, sasing, gangarak.

cinnamon, keningau.

circumcise, pinapod.

clap the hands to, manapap.

clean (*adj.*), napapuan, nisasan: to clean pinupuan, isasih.

clear, tarang, matarang: (*of water*), menining.

clever, (*M*) pandei, mapandei: (sensible), makagoang.

climb, mengkeuah.

close (*to shut*), magangab: (imper.) angabih.

close to (*near*), memad.

close together (*crowded*), makodat.

cloth, lampei.

clothes, (*M*) pakaian: v. 'Dress.'

cloud, dutoh, gaun.

cloudy (*of the sky*), jinomûd.

cluck to (*of a hen*), menimpukak.

clump of trees, puru, sempuruan.

cluster of fruit, sampungoh, pungoh: of coconuts, sampapah.

coal, (*M*) arang.

coarse, (*M*) makasar: (*of texture, &c.*), makabulu.

coat, kawal: sampot, a coat made of deerskin, timbadau hide, &c.

coax to, kojur, dumojur.

cobra, mentakag: bantu, the hamadryad.

cock, tendah.

cock-fight, menturapih.

cockroach, lipus.

coconut, piasau.

coconut-shell, ranggut.

coin, dusin.

cold (*of weather*), mesimoh: mesimuan, to shiver with cold: (*of substances, water, &c.*) masaroi.

cold in the head to have, magosud.

collect to, semimpong.

collide to, makapantapak.

comb, sudai: (*of a cock*), tanggir.

come, domatong, datong: (*imper.*) kueh: 'kueh dogitu,' come here.

commence, menimpun.

companion, dangan.

compete, lumawan.

complete, kaiiun, menukod: to complete, mokod.

conceal, semambunih.

conceited, makomoh, sumantuh.

conduit, tabarusoh.

confess, (*M*) menakun.

connect, natungul: (*imper.*) tungulok.

connection (*have connection with*), makinduh, magiut: mengkamatah, to make an assignment with a person.

conquer to, (*M*) menang.

constipated, tiabal: natiabalan, constipation.

contented, masenang goang.

contents, suang: kandok suang, empty.

coo (*of doves*), meningkurok.

cook to, mangsak, mengangsak: dapuan, a kitchen, the centre of a Murut house where the fire is made.

cooking-pot, (*M*) periok.

corn Indian, budit.

corner a, pantikuan.

corpse, (*M*) bangkei.

correct, topud, kepioh.

cotton, gapas: sariban, the cotton tree.

cough to, mengkukol.

count to, maiiak, mengiapun.

country, pamagunan.

cousin, pabukat: pabukat igundoh, a first cousin: pabukat paginduoh, 2nd cousin: pabukat pangintaloh, 3rd cousin.

cover to, tetubin.

coward, cowardly, mataloh.

crab, karas, gagawoh.

cracked, lumatak.

crocodile, tambuaia.

crooked, talingkong.

cross to, memeripag, padipag, dumipag.

crow a, bengkak.

crow to (*of a cock*), meningkurok.

crowded, masarah, meramei.

cry (*to weep*), mentangih.

cry out to, lumakuih.

cucumber, sangup.

curlew, tagilok.

curly (*of hair*), kulanggot, menuriongkok.

current of a stream, lintagup.

curse to, maguras.

custom, (*M*) adat.

cut to, mengorot, (*imper.*) korotoh: (*to chop, with a parang*) napidis, (*imper.*) padisoh.

cut in 2 pieces (*to split*), napotul, (*imper.*) potoloh.

cut down (*jungle, &c.*), mentagad: dumilik, to clear undergrowth.

D.

dam to, mengalad.

dam a, aladan.

damage to, narunsai.

damar, salong.

dance to, mensaiau: lulungunan, a spring platform used for dancing: koilulunggun, one of the steps of this dance: magititikas, to dance alone, holding and beating a gong: magodud, to dance alone, in the Dusun fashion, with arms outstretched.

dangerous, mabisa.

daring, banih.

dark, merundom.

daughter, anak doandok, dalaing doandok.

day, odoh: modoh, morning, when the sun is high, 9 or 10 o'clock: tumampak odoh, midday, 'the sun overhead': mapulid, manuil, early afternoon, 3 p.m.: topongsisid odoh, late afternoon, 5 or 6 p.m.

day after tomorrow, sangodoh sasuab.

day before yesterday, sanda daih, sangodoh daih: 'in 3 days' time' kataloh: every day sangodoh odoh.

daybreak (*dawn*), matawang.

dazzling, magasil.

dead, mopatoi.

deaf, mabungal.

dear (*expensive*), matang.

debt, (*M*) utang.

deceive, menipu, memusing.

decide, nokat.

deep, mendalum.

deer, (the sambur) payoh, tambang: (barking deer) tugau: (mouse-deer) kaduan.

delirium, to talk in, magampuang.

demand to, mikianih.

dented (*as a blade*), mapirang.

deny to, magalih.

descend to, tumun, indiwah.

detest, mararamuh.

dew, taridoh, balabau.

diarrhoea to have, mentaburus.

die, mopatoi.

different, bokun: (*of different kinds*) nakapinansusuai.

difficult, masusah.

dirt (*refuse*), sakut.

dirty, bejamut, sait, makasait: (*of water*) malutut.

disease, (*M*) penyakit: balik, the skin disease, known as (*M*) ‘balang.’

dislike, mararamuh.

distant, malud.

distrust, ka mintopud.

disturb, (*M*) mengachau.

dive to, mentolup, tumolub.

divide to, taiad.

divorce, mabintas: mikiintas, to ask for divorce.

do, anuan, pakuan.

do not, don't, kai.

dog, assuh: ukoh, a puppy.

door, urupun.

dove, kokorok.

down to go, tumun, indiwah.

downstream, dabugus: to go downstream, mempiugus.

dowry, purut: pibah, the marriage gift from a father to his daughter, formerly equal to half the amount of the dowry, now equal to the excess of the dowry over $60.

drag to, dalatun.

dragon, tembaka.

drain a, (*M*) parit, susungoi.

draw (*to pull*), logutun, dalatun: (*to engrave, &c.*) mebatik.

dream, inopih: to dream, maginopih.

dress, (*M*) pakaian: kawal, a coat: tapih, a short skirt: abag, a ’chawat’: jiruk, luluku, large wicker headdresses.

drift to, mabas.

drink, menginum, inumok.

drive away, pagiduun: memuoh, to drive away birds from a padi-field.

drop to, matoh, meratoh.

drop a, tumoh.

drought mongodoh.

drown to, losud, nalosud: cf. ‘nopatai ioh losud timpok ioh nadusoh susungoi’: (he was drowned while swimming the river).

drunk, magaup.

dry (*adj.*), mapuah, natog: to dry in the sun manog, tugoh: to dry over a fire salagun.

duck, utik.

dumb, bungangang.

dun to, sika, mensika.

dung, tetai.

during, timpok: cf. ‘mamok nopatoi nuh timpok penabuh ih’: (many people died during the small-pox epidemic).

dusk, mundom.

dust, agis.

dwarf a, kinumotog.

dysentry to have, mentaburus du dah.

E.

ear, telingah.

earring, sanggal.

early, mensarap: matawang, early morning, dawn.

earth, (*M*) tanah.

eat to, menakan.

echo, tumiwau.

eclipse (*of sun*), tinolum niaru, (lit. “a spirit” is swallowing).

eddy, diruh: also used for the circular markings on a buffalo's hair: (cf. Malay ‘pusar’).

edge, popud: on edge, (*of the teeth*) masiog.

effort to make an, iri.

egg, taloh: to lay, tumaloh: memabak, to hatch eggs: memamut, to sit on eggs: bunsut, the nesting place, of a hen.

elastic (*adj.*), lumanat.

elbow, (*M*) siku.

elephant, gadingan.

else, what else? bagoh, atok bagoh?

emaciated, metukal.

embers, bah.

embrace, magorok.

emigrate to, mapindah, madangkat.

empty, kandok suang.

end the, upod, munjok.

enemy, sumangod.

energetic, merajin.

enough, samah, sukup.

enquire to, mengimuat, moipomarah.

entangled, nagaguliokud.

enter, mumpas, makasubul.

entreat, mikianih.

envy to, mesolun.

equal, nagagundoh.

escape to, magidoh.

evening, mundom, merundom.

every, ngai ngai.

evil, meraht.

exceedingly, kepioh, ka nararuoi.

exchange, magalid.

expensive, matang.

explode to, lumapot.

extinguish, lasaih, memalasah.

eye, mâtau matok: makudat, 'to make eyes.'

eyebrow, bulangkong, kudat.

eyelash, kuriap.

F,

fable, tunud, susuih.

face, burus.

faint to, memukad.

faint (*not clear*), as a footprint, &c., napali, nalulu.

fall to, matoh, meratoh: (*of a tree*) naruad.

fallow, melanah.

famine, bitilih.

far, malud: as far as, disum, domisum, makasaboi: cf. 'mengkeuah tetaun domisum umbus nanoh' (to climb a tree to its very top.)

fast, keribok, mahjag.

fasten to, mengkaput.

fat, melabong: (*noun*) lomok.

fate, saluad.

father, amak, bapa.

father-in-law, mangiwan.

fathom, (*M*) depa.

fear, mala, matalau.

feast, silad: to give a feast, mensilad.

feather, bulu.

feeble, 'ka ka aru.'

feed, menakan: (at the breast) tomitih.

feel, perasahan.

fell to (*jungle, &c.*), dumilik, mentagad.

female, doandok.

fence, ampua, pagar.

fern, arusap: arusap maganak, a kind of fern, boiled and eaten by women when pregnant.

fetch, ibitah.

feud, sangud: to have a feud, mengsangud.

fever, sumarum.

few, makoreh.

fibre, bebuton.

field, alab: ranau, a wet padi-field.

fierce, mesangit.

fight, mengkeragan: magagabuh, to wrestle: of cocks menturapih.

file, (*M*) kikir: to file the teeth, magasah dipun: to walk in single file maususunoh, mansunoh.

fill to, masuang, mepanoh.

fin (*of fish*), kiwas.

find, mekalap, merampatan: cf. 'ium noh ioh makasaboi du merampatan': (look for it till you find it.)

fine (*adj.*), mainseu: (*of texture, &c.*) mahlus.

finger, karindoh: tatingkis, the little finger: 'kandok n'garan,' the third finger: lungkuih, the second finger: tuturoh, the first finger: tutumpoh, the thumb.

finger-nail, salindoh.

finish, nokud: cf. kapoioh nokud aku menakan (I have not yet finished eating): makaih, 'it is finished': (M. 'sudah habis').

fire, apui: to set on fire, menunsul.

fire-fly, anninipud.

firewood, siduan.

firm, matagap.

first first of all, pun noh garing, impun.

fish a, pait: to fish (*with net*) jala, meningjala: to fish (*with line*) mengapun: to fish (*with tuba*) moipenoh.

fish-trap (*of bamboo*), saluid: sibur, a kind of 'kelong,' banked round with earth.

fish-hook, apon.

fist, angomun: tempokun, to strike with the fist.

flag, (*M*) bandera.

flap the wings, meninkabur.

flat, merantei.

flatter to, mangumpod: (*imper.*) impodoh.

flea, tuntulumoh: to search for fleas in the head, mensisik: (meningkutu, to perform this office for another person.)

flee to, magidoh.

flesh, daging.

float, lumantob, lumapog.

flood, mempaliud: (Bokan, mantuh.)

floor, sulig: lulungunan, a spring dancing-floor.

flour, (*M*) tepong.

flower, busak.

fly a, bungkulut: pikud, the horse-fly.

fly to, mensiab.

flying-fox, bángkaut.

foam, putah.

fold to, lapotun: fold the arms, to stand with arms folded masongkipul.

follow, sumugut, maiah: cf. maiah du susungoi makasaboi du sulap ngitu, follow the river up to the hut: maiah daguh, to obey.

food, akanan, lutuh.

fool, palui.

foot, keraiam.

footmark, baiak.

forbid, mensawai.

forehead, dudoh.

forget, limuan, malimuan.

forgive, makiasih.

formerly, garing.

fort, (*M*) kota.

fortune, saluad.

foul, bajamut, sait, makasait.

founder (*of a boat*), dumojob.

fowl, manok, piak: magorok, to call fowls.

fox, flying, bangkaut.

freckle, freckled, tetaih bungulut.

free, lumapas: to set free malabus: (*imper.*) labusih.

fresh, baguh: (*of water*) mapaloh.

friend, dangan, amod.

frightened, malâh, mataloh: pasatuntor, to shake with fright.

frog, bunong, beringkatak.

from, intod: atok intod moh? = where have you come from?

front in, gintuong, gintuongan.

fruit, (*M*) buah: punti, the banana: lampun, the durian: suah, kulapis, the lemon: mangga, the mango: manggis, mangusteen: luun, the tembadak: kalambuku, the 'rambutan': tempasak, the 'kapaias': kian, the 'tarap': nangko, the jack-fruit, nangka.

full, panoh, mapanoh: (*containing something*) makasuang: (*M.* kenyang) nasob.

full-moon, mansarawang.

G.

gad about, to mengambei: pagambei, a lover: (*of a woman*) mikiambei.

gain (*to win*), menang: (*profit*) untong.

gall, (*M*) ampadu.

gambier, (*M*) gambir.

gamble, mempapakau.

game a, magaiam.

garden, tetanun, kabun.

gather (*trans.*), menganam: (*imper.*) anamoh: (*intrans.*) timong, tumimong.

gaze (*stare at*), magiloi.

genuine, topud, kepioh.

get, makalap: (*imper.*) alapoh.

get into, makasubul: "lasaih apui inuh, makasubul lisun inuh matoh ku: (put out that fire, the smoke gets into my eyes).

ghost, kraganan, tentolong, ambiruoh, berioh, keragioh: kraganan, ghosts of the dead (invisible): tentolong, ghosts supposed to have the power of carrying people up trees: ambiruoh, supposed to follow people in the jungle and annoy them, not to cause death: berioh, ghosts that always cause death: keragioh, ghosts that haunt the jungle: (supposed to eat people).

giddy, magiruh iruh, manampehroh: magananipad, "to see stars."

girdle, abut.

girl, doandok.

give, anih.

go, go away, mogad: (*imper.*) magidoh.

go down, tomakad.

go in, mumpas, makasubul.

go home, mulih, makolih.

go out, semerurak.

goad to (*e.g. a buffalo*), menobok.

goat, (*M*) kambing.

goitre the, anggok.

gold, (*M*) mas.

gong, (*M*) agong: taubun, a large gong: tawak tawak, chenang (*M*) chenang.

good, mainseu.

good-bye (*to a person going*), ugad kanah: (*to a person remaining*) tioh kanah.

gourd, mantisun.

gradually, ipipiioh.

grandfather, akih, penakih.

grandmother, pengadu.

grandson or **-daughter,** kamaman.

grass, sakot: alap, the lalang grass.

grasshopper, kapoh.

grave a, lobong: sulap lobong.

great, maiioh.

greedy, madôht.

green, melinsih.

ground, tanah.

grow, tumoh.

growl, menongur.

grunt, (*of a pig*) menangkus.

gums the, sinsilun.

gun, (*M*) senapang.

guide to, mempaguloh.

gutter, (*M*) parit, susungoi.

H.

hack to, mengkolog.

hair, abok: naöbas, a lock of hair.

hair-pin (*of bone, or ivory*), timbuk.

half, (*M*) s'tengah.

halo (*of the moon*), memangka.

halt to, tomangus.

hammer, (*of a gun*) kinudakuda: hammer to, papaki.

hand, longun.

handful a, sagongon: 'two handsful' sangakop.

handle, (*of a parang or knife*) uluan: (*of a spear or blow pipe*) tanguran: utin, the part of the blade that goes into the handle.

hang to, tehrikun.

hard (*of substances*) makutub: (*difficult*) masusah.

harvest to, menantab.

hat, (*M*) topi: salukup, a large wicker hat.

hatch to, memabak.

hatchet, (*beliong*) panâh.

hate to, mararamuh.

haul to, sintakun, logut.

have, has,* makondoh.

hawk, kanoih.

he, disoh, ioh.

head, ulu: ingguluin, nakalap ulu, to take a head.

headman, ulun maiioh.

headland, pulong.

heap a, pumpun.

hear, megining, mongining: "kapoh nokening aku du bansur": (I have not yet had news).

heart, ('*jantong*') pusuh: ('*hati*') goang.

heavy, magat.

heel the, tunob.

heel to (*of a boat*), luminggang.

heir, (M) waris.

help to, indangan.

hen, punan, papunan.

her, (v. him, his).

herd, *of cattle* panun: sampanun.

here, dogitu.

hiccough to, mensikok, mensadu.

hide to, semambuni: (*of animals*) kungkung, kulit.

high, mesawat.

highwater, mempaliud, liud.

hill, tidong.

him, ioh.

hip the, awak.

his, ioh tampoh: nanoh, after the noun = Malay -nya.

hiss to, (*as a snake*) memangong.

hit to, memalambah: (*with the open hand*) tepapun, lapisun: (*with the fist*) tembukon.

hold, onggoiok.

hold (*contain*), masuang.

hole, berongoh.

hollow, ka masuang.

home to go, mulih, makolih.

honey, lating meningot.

hook, apun: mengapun, to fish with a line.

hook onto to, nakait: (*imper.*) kaitoh.

hope to, mengarap.

horn, sangau: menangau, to attack with the horns, to butt.

hornbill, the tuntudun.

hornet, surun.

horse, (*M*) kuda: igioh, a mare: to ride a horse, masak kuda.

horse-fly, pikud.

horse-leech, limbata.

hot, melassu, (pungent) mapodos.

house, balui.

how? atok kosun na:

how many times? kain kurra.

how much? kurra.

how long? kurra boi.

howl to (*as a dog*), mogaum.

huge, maiioh.

humpbacked, mabunkor.

hungry, maitilan.

hunt to (*with dogs*), membugah: pamajaling, majaling, to hunt with dogs, using nooses of rotan (jaling): (*stalk*) mengkakab.

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*Mokondoh, used in sense of Malay "ada" either *is, are* or *have, has,* or used with a verb to express past tense, as Mokondoh bilin noh daki,—he sent me a message: mokondoh domatong,—he is coming.

hurry, keribok, maiinsoh, dibaki.

hurt, kinadual: (*imper.*) kadualoh: cf. 'kai kadualoh ulun inuh': (don't hurt that man.)

husband, dalaki.

hush! tuloh!

husk (*of grain*), apol.

hut, (*M*) sulap.

I.

I, aku, kuih: (daki = me).

idiot, paloi.

idle, matiad.

it (*not used*), cf. "nambat noh poioh berai domatong dogitu" (if you meet him tell him to come): "makapandei aku poh tentu du ka indangan ku" (if I had known I would not have helped him).

ignorant, paloi, ka maindaram.

iguana, taraioh: kambok, the tree iguana.

ill, somakit, mesakit, medul: masanadan, very ill, the last stages.

ill-tempered, marigogut, masarok mangit.

illegitimate, anak pungoh.

imitate to, baiak baiak.

immediately, daiitu, tarus.

impede to, mensawai.

impropriety to behave with, mengkamatah.

impudent (*M*) korang ajar.

in, inside, dilalam.

increase to, tumpok.

incur to, makonoh, maintupan.

India-rubber, pulut malamih.

Indian corn, budit.

indolent, matiad.

industrious, merajin.

inexperienced, kapoioh maindaram.

infant, daragang.

infectious, (*M*) jangkit.

inform to, berai.

information, bansur.

inhabit, memagun: pagun, a dwelling place, a village.

injure, mabinasa.

inlaid, peropok, fastened in, like a nail in a wall.

inland, (*M*) darat.

inquire, mengimuat, imuaton.

insane, makolus.

insect, (*M*) binatang.

insipid, mapaloh.

inspect, (*M*) memereksa.

insult to, uiuh, monguiuh.

intend, mesagah.

intercourse to have-with, magiut, makinduh.

inter to, lobong.

interest (*on money*), anak.

interpreter, (*M*) jurubhasa.

interrupt, sumob daguh.

intoxicated, megauk.

invite to, menimpag.

iron, (*M*) besi.

is, makondoh.

island, puru.

itch itchy, matol: kagal, the itch, ('*kudis*'): kurap, ringworm.

ivory, gading.

J.

jacket, kawal.

jagged (*as a knife edge*), mapirang.

jail, telungkoh, (*lit. stocks*).

jar a, paiungan: kakanan, a 'tajau': kibut, berina, a 'kabok.'

jaw, ajai.

jealous, maiingot.

jeer to, makakudit.

join, sumpat.

joint of bamboo, (*M*) buku.

jolt, tegogun.

journey, mogad, mugad.

juice, makaduh.

jump to, timingkurok, temindak.

jungle, kasarawan: gimbahan, virgin jungle: nohmok, secondary growth, 'blukar.'

just, topud, kepioh.

just now, daïtoh bagoh: bagoh ioh domatong, he is just coming.

K.

keen (*sharp*), malais.

keep, memponan: (*imper.*) pemponoh.

kick to, tunub, menunub.

kidneys the, angkawa.

kill, nomatoi: (*imper.*) potoioh.

kind (sort), (*M*) bangsa.

kind-hearted, mainseu, mainseu goang.

kindle, (*e.g. a fire*), pamiag, memiad.

kingfisher, tawakir: mantis, a small species.

kiss to, magarok.

kitchen, dapuan.

knee, atud.

kneel, magaratud.

knife, pais: burong, a 'parang.'

knot, timpagas: to tie a knot menimpagas.

know, mapandei, pandei: endaiih, "I don't know": (*be acquainted with*) makolig, moligan.

knuckle, (*M*) buku.

L,

labour, (*M*) kreja.

laden heavily laden, mapanoh.

laden to, pasuangun.

lalang-grass, alap.

ladder, tukad.

lame, mangkuda.

lament to, matangih.

land (*as opposed to sea*), (*M*) darat: katanan.

land to, (*from a boat*), mangingtanan.

language, daguh.

lap to, (*as a dog drinking*), dumilai.

large, maiioh, makuluh.

lasso, a sarigut: to lasso, menigot: (*imper.*) sigotoh.

last (*to endure*), metahan.

last (*of time, &c.*), taurih.

last night, dundom daih.

late, lambei, melambei.

lately, daïtoh.

laugh to, makakudit.

lay (*to place*), bulai, polioh.

lay eggs, tamaloh.

lead (*to guide*), mempaguluh: (*as a buffalo, &c., with a rope*) dalatun.

leaf, (*M*) daun.

leak leaky, lauasan.

lean (*thin*), matukal.

lean to, mempiras, pasandigun.

leap, timingkurok, temindak.

learn, maganad.

leave (*trans.*), pauantan: (*intrans.*) mugad.

leech, limpudu, limbutang: limbata, a horse-leech.

left, kait.

left-handed (*of a person*), natongkait.

leg, (*foot*) keraiam: (*whole leg*) sempanan, sakukur.

legend, tunud, susuih.

lemon, suah, kulapis.

lend to, midah.

leprosy, gamuh, losok.

let (*to allow*), gamah.

let go, malabusan.

level, merantei, nagagundoh.

lick, tilah.

lie (*to tell a lie*), magambut.

lie down, mikikolong: (*on the back*) lumangkid: (*on the face*) lumog: (*on the side*) tumehging.

life, peniaw.

lift, matarih: cf. magat kepipioh ka matarih ku, it is exceedingly heavy, I cannot lift it.

light to (*e.g. a fire*), pamiag, memiad, madoki.

lightning, ganit, tungkilap, kilap: meninisih, to be struck by lightning.

like to, mesagah.

like, (*similar*) nagundoh.

lime a, kulapis.

lime, (*eaten with sirih*) apog.

limpid, menining.

line, kumiting: (*of the palm of the hand*) bamburut karindoh: cf. mogilai du bamburut karindoh memad ioh matawang: it is early morning, one can distinguish the lines of one's hand.

lip, munong.

listen to, mengining, megining.

little (*of size*), mosat, mebodok: (*of quantity*) kosat.

live to, biag: (*to inhabit*) memagun: pagun, a village: sampagun, to live in the same village as another.

liver, angkaiau.

living (*alive*), tinambiag.

lizard, house- ambiruoh baloi: grass-lizard garang.

load a, magibah: to load pasuangun.

lock of hair, (unbound) naöbas: tininbuku, a lock of hair bound and kept together with a hairpin: ("timbuk.")

locust, kapoh, kakaiak.

log, tetaun.

loin-cloth, abag.

lonely, masiruk.

long, mawad: (*of time*) maboi: kurra maboi, kurra boi? = how long?

long ago, nakalaiid noioh.

long for to, mesagah.

look at to, mogiloi.

look for, ium, megium, makium.

‘**look out**’! ilai.

loose (*adj.*) maluag: loose to, malabusan.

lose, metatag: (*get the worst of*) mala.

lose one's way, makaraiau.

loss, (*M*) rugi.

louse, kutu, kuad.

love to make, dumojur.

lovely, mainseu: (*of persons*) mapasau, mainseu.

lover a, pagambei.

low, mediwah.

low tide, mosat, timog mosat.

luck, saluad.

lucky, saluad mainseu.

lunatic, makolus.

M,

mad, makolus.

maiden a, darâh.

maize, budit.

male, kusoi.

make, anuan, pakuan.

man, ulun, kusoi.

mane (*of a horse*), tetabir.

manggo the, (M) mangga.

mangrove, (*M*) bakau.

many, mamok: (*numerous*) mawas: domassam mawas, heavy rain: how many? kain korah.

mare, igioh, kuda igioh.

mark, (*M*) tanda: baiak, a footmark: pinututan, mark of an animal by cutting its tail: to mark (*e.g. a tree by blazing*) mebatin.

marry (*of a man*), magagalus: (*of a woman*) magaguat, mempapurut: (purut, a dowry): moipanudong, to ask in marriage.

marsh a, losok.

mat, iam.

match, pendidip.

matter (*pus*), (*M*) nanah.

matter, what's the? atok nakoran?

mattress, (*M*) tilam.

me, daki.

mean, (stingy) makalit

measure to, tukoh.

meat, (*M*) daging.

medicine, (*M*) ubat: tetapis, native medicine.

meet, nambat, matuka, makambut.

melt, tumanoh, mapusoh.

mercy, makiasih.

message to send a, mamilin, balinin.

mew (*of a cat*), daguh.

middle, (*M*) tengah.

midwife, mangungoi.

milk, gatas: to milk memagah: tomitih, to feed at the breast.

mimic to, baiak baiak.

mina (*the bird*), tioh.

mind, (*'never mind'*) gamah noioh.

mine, aku tampoh: aku (ki) kuih, used after noun they govern, as in Malay:

mingle to, pagamonguh.

mist, dandaman, gaun.

mistake to make a malimuan.

mistrust, ka mintopud.

mix, pagamonguh.

moist, masah.

moment, sangkinurad: cf. "sangkinurad da moiun, ka maboi aku": (wait a moment, I won't be long.)

money, dusin.

monkey, jibulau, the 'kerah': gabok, the berok: kalawat, the 'wah wah': dungoih, the long nosed monkey: kagoioh, the 'mawas' (orang utan).

month, (*M*) bulan.

moon, (*M*) bulan: mansarawang, full moon: kasisilah, new moon.

more, makalabih bagoh.

mortar, (*for pounding rice*) tutuan.

mosquito, namok.

mosquito-net, kabunan.

mother, inah, panginah: cf. 'atar inah moh': = (M) 'puki mak': (a term of abuse).

mother-in-law, mangiwan.

mountain, tidong.

moustache, jarub.

mouse, (*M*) tikus.

mouth the, kabang: mouth of a river nagalongan, alongan.

move (*intrans.*), madangkat: (*trans.*) baluih.

much, mamok.

mud muddy, losok: (*muddy, of water*) malutut.

mule, (*M*) kladi.

murder to, mematoi: (*imper.*) potoioh.

muscle, uat.

music, daguh: kulintang, a kind of violin, made of bamboo, with rotan strings: sempotun, a kind of bamboo flute.

my, aku tampoh, kuih tampoh.

N.

nail, (*M*) paku: finger-nail salindoh.

naked, lumabas.

name, ngaran: 'atok ngaran susungoi dogitu?' (what is the name of this river?)

nape of neck, impus.

narrate to, nomarah, pauaran.

narrow, mapisok.

nasty, meraht, ka mainseu.

nationality, (*M*) bangsa.

navel, pusut.

near, memad: nakodat, to go near, to approach.

nearly, memad: memad ioh mopatoi, he nearly died.

neck, liog.

need to, mesagah.

need, (noun) pasagan: cf. "atok pasagan moh": what do you want.

needle, sabul.

nephew, akun.

nest, tambunan.

net (*for fishing*), jala, penakat.

nettle a, (with large stinging leaves) arupui.

never, kai gunduh.

new, baguh: baguh is used also in the sense of 'then only' (as Malay 'bharu'): cf. "uasih busak inuh, baguh ioh tumuh," (water those flowers and then they will grow): mainseu molong": (set the "pamiag du apui, baguh om fire going and then we can sleep in comfort).

news, bansur.

nice, mainseu.

niece, akun.

night, dundom, mundom. dundom daih, last night.

nightjar the, labok.

nimble, mepinit.

nip to, kadut.

nipple (*of breast*), titih.

no, not, ka, salah.

noise, mohtah, magutah, mindaguh.

nonsense, paloi.

noose, sarigut: sigotun, to catch with a noose, to lasso.

nose, adong: maginsingor, to blow the nose.

not any, none, kandok: kaiioh.

not at all, ka gundoh.

not enough, ka sukup, ka samah.

notch a tree to, mebatin.

notched (*of a blade*), mapirang.

now, daiitu.

numb, orodun.

numerous, mawas: domassam mawas, heavy rain.

nurse to, bebilun: tomitih, to feed at the breast.

O,

oath, mopatod: take an oath mopatod, magibut.

obey, maiah du daguh.

oblong, taigagawad.

obstinate, kumaras.

obstruct to, lumawan.

obtain, mekalap.

ocean, dat.

odd, (*M*) heran.

odour, mowoh.

of (*possessive*), tampoh.

offence, (*M*) salah.

offended, medul goang.

often, masarok.

oil, piad: Piad tanah, kerosine oil: Piad tetaun, the sap of a tree.

old, matua.

omen, angai.

on, disawat.

once, igundoh.

one, dundoh.

onion, babawang: (Dalit i.e. Peluan dialect bintudu).

only, iak.

open, sukab: to open, sukabun: (*imper.*) sukabih.

opium, (*M*) piun.

oppose, mengkeragan.

opposite, magintuang.

orange, suah.

*__or,__ kia: 'talah-kia ginu-kia?,' this or that?

orchid an, sarongih.

order to, menusub, moipomarah: (*imper.*) sukubuh.

order to put in, nakiting: (*imper.*) tingoh.

ornament to, mematik.

ornamentation (*e.g. on a shield*) batik.

other, bokun: cf. 'atok aien (atoien) ulun du bokun-ih?' (where are the other men?)

ought, (*M*) patut, mapatut.

our, akai tampoh, monoh, (used after the noun it governs, as Malay -nya.)

out outside, liwad.

oval, taigagawad.

over, disawat, tumampak.

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*Also used in interrogation in the sense of the Malay "kah": nakaralong ioh kia ka-kia. Cf. Makaratong ioh kia ka-kia?—has he arrived or not?

overcast (*of the sky*), jinomûd, jim'ôht.

overgrown, masakut.

overladen, mapamoh.

overturn to, mesasad.

owe, magutang.

owl, puak.

ox, (*M*) kerbau.

P.

pack up to, mengkaput: (*imper.*) kaputi.

package a, magibah.

paddle a, kabir: to paddle, mengkabir.

padi, bilod.

padi-field (hill), tindal: menindal, domilik, to prepare hill padi-field: (wet) ranau: menaras, to prepare a wet padi-field: linawăng, the lines between (wet) padi when planted out: bokok, the ridges dividing wet padi-fields: rampud, large receptacle of bark, for storing padi.

pain painful, somakit, medul.

pale, mapasih: (*of colours*) mebuloh.

palm of hand, palad: bamburut karindoh, the lines of the palm.

pant to, magingus: ingus ingus, out of breath.

paper, (*M*) kertas.

parang, burong: kinamulan, a long sword-shaped parang: paiirang, a 'parang hilang.'

pass, mensail, pantaliban.

path, baian, baian lalas, dalan.

pay for, membalai gatang, menganih gatang.

pebble, (*M*) batu.

peck, menindok.

peel, (*M*) kulit: to peel mengkulit: (*imper.*) mengkulitih.

pelt to, memohas, bosoh.

penalty, sagit.

pendulous, (of breasts) lumoiud.

people, ulun.

pepper, ladoh.

perch to (*of birds*), modup.

perhaps, (*M*) barangkali.

permit, gamah.

person, ulun.

perspire to, umasan.

persuade, pajaloh.

phlegm, usod.

pick up, alap, menganam.

pick out, (as a thorn from the foot) surah, memurah: (to choose) (*M*) pileh.

picture, (*M*) gambar: batik, engraving, ornamentation.

piece a, taiadan.

pierce to, tebokun.

pig (*wild*), basing: (domestic) bawih.

pigeon (*the 'punai'*), tawan: (*the 'punai tanah'*) limbukun: (*the 'pergam'*) balud.

pile a, pumpun.

pillow, lulunan.

pimp, (*M*) beruah.

pinang, kusob: magintat, to chew betel-nut.

pinch to, kadut.

pineapple, sarabak.

pipe (*large, of bamboo*), sût: tabaga, a small wooden pipe with thin bamboo stem: (*a conduit*) tagurusoh.

pitch (*resin*), salong.

pitcher-plant the, tutuyod.

pitted, (with small-pox) pilat, burus pilat.

pity, makasih, marobat: it is a pity marobat: cf. "marobat patidin moh piad ih": (it is a pity to waste the oil).

place a, aianan, pemulian: to place bulihin, nak'ôluih: (*imper.*) polioh.

plain, matarang, matawang.

plain a, alap.

plait to, manolampit.

plan to, (*M*) pakat, mempakat.

plant to, tinanom, menanam: a plant, busak.

plantation, tetanun.
plate, lalaian.
play to, magaganja.
pleasant, mainseu.
plenty plentiful, mamok.
plot to, (*M*) pakat, mempakat.
plough to, meradu.
pluck to (*e.g. a flower*), moi-upuh: (*a fowl*) memubol, mabulun.
plunder to, madamas, domasun.
pock-marked, pilat.
point to, turuok.
point (*the tip*), munjok: (*a headland*) pulong.
poison, umpadan: tuoh, the tuba poison: palig, poisonous sap (used for blowpipe darts): binah a poisonous root, mixed with "palig": limuan, or limbuanan, poisonous leaves: (name probably derived from limuan, "oblivion"): tamban, a poisonous root.
poisonous, mabisa.
pole a, luguh: (*for punting*) tukol.
poke to, susok, sinusok.
pool a, luluiun.
poor, (*M*) miskin.
populous, masarah, meramei.
porcupine, tautong, lisis.
post a, luguh.
pound to, manutu: tutu, a pounding-stick: tutuan, a mortar, for pounding padi.
pour to, lingingun, dalinun.
powerful, maikang.
praise, umpod.
praise to, impodoh: maki-umpod, to boast.
pregnant, menantian, mapang.
prepare, samadîa, makasedia.
present to, anih.
present at, daiitu.
press to, sendotun.
pretend, magakal.
pretty, mainseu: of persons, mapasau, mainseu.
prevent, sawaiun.
price, gatang.
prick to, matobok, tebokun.
prisoner, binduan, (*M*) orang salah.
probably, (*M*) barangkali.
prop a, tetokud, tetansok: to prop, natokud, natansak.
property, dapu: mamok dapu, rich.
prostitute, (*M*) sundal.
proud, makomoh, sumantuh.
prow of boat, julong, diulong.
pull, logotun, dalatun: (logotun, to pull gently, dalatun, to pull hard).
pull out (*as a parang from its sheath*), butus: (*as a root from the ground*) menubul.
pulse the, peniaw uat: kibut kibut, to beat (*of the pulse*).
pumpkin, mantisun.
pungent, mapodos.
punt to, mentukol.
punting-pole, tukol.
puppy, ukoh.
purpose on, inintopud.
pursue, maiindakup.
push, sungkangun.
put, balihin, nakoluih: (*imper.*) polioh.
put out (*to extinguish*), lasaih.
putrid, moötong.
python the, mendolun.

Q,

quail the, pipitau.
quarrel to, mengkeragan.
quarter, (*M*) sasuku.
queer, matambungoh, (*M*) heran.
question to, mengimuat, imuaton.
quick, meribok, keribok, mahjag: (*agile*) mepinit.
quiet, be quiet! tuloh! kai pagusoh.
quill (*of porcupine*), garit, kadamok.

quiver to, menuntor: with fear pasatuntor.

quiver of darts (*made of bamboo*), kobun.

R.

race a, (*M*) bangsa: to race, semimbul.

raft a, gakit.

rafter (*main*), pakang: small, *M.* '*kasau*') timpudokong, dolus.

raid to, mengaiau.

rail hand-, kakapitun.

rain, domassam: domassam mawas, heavy rain: (cf. M. 'hujan lebat').

rainbow, bunsirak.

raise to, kakaton.

ramrod, lulugup.

rape, ginabuh.

rapid, madaras a rapid, rikus.

rare -ly, melambat.

raspberry, surinid.

rat, (*M*) tikus.

rations, lutuh.

ravish to, ginabuh.

raw, matah, bebata.

reach (*arrive at*), somaboi, makasaboi.

read, (*M*) memacha.

ready, makasedia.

real, topud, kepioh.

reap, mengatab, mengomud.

rear (*to bring up*), piara.

rear (*as a horse*), menterodong.

receive, makiupah, tarima.

recline, lumangkod: (*v. to lie*).

recognize, makolig.

red, meriah.

refuse to, ka mesagah, matiad.

refuse (*dirt*), sakut.

regret to, mengkada.

regular (*in order*), ketingun.

relate to, pawaran, nomarah.

relation, pabukat: magamud, to swear relationship.

rely on, mintopud, malansan.

remain, bantar, minenta.

remainder the, noantai.

remember, maganib, jimagah, (*M*) meningat, tomorandah.

repair to, patarandaiin.

repeatedly, masarok.

replace, magalid.

replete, nasob.

reply, magagual, majawab.

request to, mikianih: a request, pakianian.

reside, memagun.

resist, lumawan.

retire, dumulih, lumogut.

return (*go back*), mulih: (*give back*) paluliun.

revenge, sulian: to take revenge, sumulih.

revile, maguras.

revolve, domiruh, madiruh.

rhinoceros, tembaiungan.

rice (*uncooked*), bagas: (*cooked*) nasi: mumok, unripe rice, cooked, (M. 'emping'): (fermented) tapei.

rice-bird, (the 'pipit') pirit.

rich, langkaia, mamok dapu.

ride to, masak, masak kerbau, kuda, &c.

ridge (*of a hill*), nolug, bolud: (*between padi fields*) bokok.

right (*correct*), topud, kepioh: (*opposed to left*) pemidis.

rigid, matân.

ring, (M) chin-chin: (*through a buffalo's nose*) anting.

ringworm, (*M*) kurap.

rinse (*in water*), polangdongan.

ripe, mangsak.

rise (*get up*), somukal: (*of the sun*) sumilah, makasoroh.

river, timog, susungoi: daraiioh, upriver: sumulok, to go upriver: dabugus, downriver: mempiugus, to go downriver: memeripag, padipag, to cross a river.

road, sinangkul, dalan.

rob, madamas, domasun.

rock a, (*M*) batu.

roll up (*e.g. a mat*), padunun, balunun.

roof, tap.

room, pisok: dapuan, the centre of a Murut house, where the fire is made: bantul, the raised flooring round this 'dapuan.'

root, bakat.

rotten (*decayed*), mapasah: (*putrid*) motong.

rotan, owoi: owoi sogoh, the 'rotan sega': owoi rimut, the small, thin rotan: semambu (Malacca cane) lasun: tomatas owoi, to collect rotan. to collect rotan.

round, (*adj.*) mohrud, (*M*) bulat.

round around, (*prep.*) domipud.

rouse (*to waken*), mengadat, kadatoh.

route a, dalan.

row (*a line*), kumiting.

row (*a noise*), mohtah, magutah, pagusoh.

rub to, puiaiun.

rubber india-, pulut malamih: (*hard*) ligaian.

rubbish, sakut: (*nonsense*) paloi.

rude, (*M*) korang ajar.

rumour a, bansur.

rump the, tabing.

run to, magidoh, semimbul.

run against (*collide*), makapantapak.

rust -ty, togur.

S.

sad, merobatan: (= M. sayang).

saddle, (*M*) sela.

sago, inatok.

sago-palm, rembia.

saliva, idis, usod = engus, (phlegm.)

sallow, mapasih.

salt, usih.

salt water, timog mapadih.

salt-lick a, mesupon.

sand, agis.

sandfly, rangit.

sap (*of tree*), pulut, piad tetaun.

satisfied, masenang goang: mainseu goang: (*sated*) nasob.

say to, berai, daguh.

scabbard (*of parang*), angkap.

scald to, mauassan.

scales (*of a fish*) sisik.

scar a, pilat.

scare to, ilalânoh.

scared to be, malâh.

scarecrow, senihkakalaing: (derived from dalaing, a child; "child's work"): tetandok, dead leaves hung on a line to scare birds: lelakap, pieces of bamboo, used for this purpose: lungkating, the rotan on which these are hung.

scatter, *e.g.* padi, in feeding fowls: mapatias, patiasoh (*imper.*)

scorpion, lingangait.

scratch to, kikutok.

scream to, lumakuih, gumagang.

scum, putah.

sea, dat.

sea-shore, king dat.

search to, ium, megium.

see, mokitoh, mogiloi.

seed, umih.

seek, ium, megium.

seize, onggoiok, memerakap.

seldom, melambat.

self, (*M*) sendiri: cf. 'domatang ioh sendiri, balinin ioh ak?' (did he come himself or did he send a message?)

sell, mentaran, taranan.

send, natadan, (*imper.*) atadih.

send for, menimpag.

sense, goang.

senseless (*stupid*), paloi: (*unconscious*) ka makaliman.

sensible, makagoang.

sensual of a man, madôht mengambei.

sensual of a woman, madôht mikiambei.

separate to, taiad: (adj.) nataiad.

serve, 'serve you right': majarah kan doginuh.

set (*to place*), nakoluih, balinin: (*of the sun*) melasah, lumasah.

settle (*to decide*), nokat.

settle (*to inhabit*), mempagun.

severe, makotog.

sew to, memikit: menarut, to sew ataps.

shabby, gansing, mapasah.

shadow, baiang baiang.

shaft (*of spear, &c.*), tanguran.

shake to, mosoh: pasatuntor to shake with fright.

shake hands, menganggai karindoh.

shallow, matingkah.

sham to, magakal.

shame, muiuh.

shape, bansa.

share a, taiadan: to share, taiad.

sharp (*of a point*), malais: (*of an edge*) maladum.

sharpen to, magasah.

she, ioh, gisah.

sheath, *of parang,* angkap.

shed, the skin, as a snake, memalus: tambulalas, a hard wood that sheds its bark.

shell coconut-, ranggut.

shew, turuih.

shield a, kalid.

shift to, (*trans.*) baluih: (*intrans.*) madangkat, mapindah.

shiver (*with cold*), mesimuan.

shoal a, kumukot: of fish, sampanun: menauh, the swarming of fish at the breeding season.

shoot, memadil: *imper.* badiloh (*with blowpipe*) menyapok.

shooting star, timbunus.

shop, (*M*) kedei.

short, majunok: (*wanting*) ka samah.

short cut a, magatas.

shoulder, limbahu: sahnin, to carry a load on the shoulder.

shut to, angabib.

shut up!, tuloh!, kai pagusoh.

shy, muiuh.

sick, medul, somakit, mesakit: to be, (*to vomit*) mempalûah.

sick of, (*M.* '*puas*') masintob.

sickle a, tatantab: menantab, to reap.

side, tehgingan, tabibikan.

sieve to pass through a, meniri.

sight a (*of a gun or blowpipe*), tentaran.

sign a, tetandok, pulanau: mengapoih, to make signs, as a dumb person.

silly, palui.

silver, (*M*) perak.

similar, nagundoh.

since long since, nakalaid noioh.

sing to, medimbai, melimbai.

single, dundoh: (*unmarried of a man*), buiaiyoi: (*unmarried of a woman*), darâh.

sink to, lumunut, dumojob.

sister, pabukat: kakak, elder sister: harih, younger sister.

sister-in-law, along.

sit to, mentudong: maginsuroh, to squat, on the haunches: magalalîad, to sit on the ground with the feet to the right and bent back, the left hand resting on the ground, (Malay 'timpoh'): magibaboiad, to sit on the ground with feet outstretched, side by side, in front of one: pagulabidan, to sit crosslegged, 'tailor fashion': mentukang, to sit on the ground, with hands folded across the knees, fingers interlocked.

sit, (of a hen) mimamut.

skilful, (*M*) pandei, mapandei.

skin the, kulit: to skin, nehduan: (*imper.*) iduoh.

skirt (*short*), tapih.

skull, ranggut, ranggut ulu.

skunk the, tuduh.

sky, koanan.

slack (*not taut*), lumangkong: (*lazy*) matiad.

slander to, mamitanah: (probably derived from Malay 'fitenah').

slap to, tepapun, lapisun.

slave a, ulun ulun: cf. 'pun noh garing ih ulun dogitu ulun ulun, to begin with, formerly this man was a slave.

sleep to, molong: to talk in one's, magampuang: (Malay igau).

sleepy, kolong olong, tikikolong.

slip to, nakatuntuias: malabusan, = Malay 'lepas': cf. "malabusan burong makonoh keraiam nanoh": the parang slipped and cut his foot).

slippery, lamog, melamog.

slow slowly, ipipiioh, kapianih: liwar[2].

small, mosat, mebodok.

small-pox, penabuh.

smash, mabak, meroput.

smell to, mengarok, magarok: a smell, mowoh: mohtong, a foul smell.

smoke, lisun: to smoke, mensigup, menigup.

snake, dipu: dipu mainsisiab, the flying snake.

snap to, mapitoh, mapandak.

snare a, sarigut, antob, jaling: (a 'trap'): to snare, sigotun, pamajaling.

sneeze, tadisu.

sniff, mainsingut.

snipe, taduid.

snore to, gumarus, meningarus.

snout (*of a pig*), sesungal: menungal, to grub about (as a pig).

so, koiuh doginuh.

so-and-so, ianu.

soak in water to, polandongan.

soft, malamih.

some, paraphrased: cf. mokondoh domatong ka domatong, some came, some did not: mokondoh du dipu mabisa, mokondoh kandok, some snakes are poisonous, some not.

son, anak kusoi: son-in-law: son step- kamanakun.

song, dimbai.

sorry to be, mengkada.

sort, (*M*) bangsa.

sound a, mohtah, mindaguh.

sour, masum.

source (*of a river*), udan.

sow to, tinanom, menanam.

span a, sandangau: sandangau mawad, a span in length.

spark a, memurarau.

speak to, daguh, mindaguh berai.

spear a, dongkot: Andus, a barbed spear: to spear, menudah.

speckled, taporintek intek.

spider, lawa, angkalawa.

spider-web, tambunan lawa.

spill to, pasasadoh.

spin (*to weave*), tinalud.

spirit a, berioh, ambiruoh, kraganan (v. ghost): (made from rice fermented) tapai.

spit, magiwog.

split to, lapakun, melapak.

spoil, narunsai.

spoon, (*M*) sendok, sudu.

sprain, nakakandur uat, mesalah uat.

spring to, timingkurok, temindak.
spring a (*of water*), taud.
sprinkle, uasih.
sprout to, puput.
spur (*of a cock*), atad.
squander to, patidih.
square, pinasagi.
squat to, maginsuroh.
squeeze, memagah.
squirm, as a snake: mengkilus kilus.
squirrel, khaitan: apuiut, the flying squirrel.
squint-eyed, sulimpat.
stab to, menudah.
stagger, ugad magoag goag, mensiling siling.
stake of pointed bamboo (*caltrop*), udang.
stalk to, mengkakap.
stalk (*of a flower*), taunan.
stammer, kudalit.
stand to, menterudong: (*imper.*) patudong: (*to endure*) tomahan.
stand up, somukal, kumakal.
star, butiting: butiting mentatakoh, the evening star: timbunus, a shooting star.
start (*to set out for*), tumuad, tumuad mogad.
startled, mokoporog.
stay, bantar, minenta.
steady, maikang, matân.
steal, takoh, mentakoh.
steel, (*M*) besi.
steep, mapusok.
stem (*of a flower*), taunan.
step to, kamidau, kidawi.
steps (*of a house*), tokad.
stern, makotog.
stern the, tabing: (*of a boat*) ulin.
stick a, sasukud: to stick, dumokut.
sting a (*of a wasp, &c.*), tuli: to sting, meningot, manokot.
stingy, makalit.
stink, mohtong.
stir, sasau.
stocks, telungkoh.
stomach, tinaih.
stone, (*M*) batu.
stoop to, kamoöh.
stop, (*intrans.*) tomangus: (*trans.*) menikog: (*imper.*) sikagih.
storm, magangin, angin mapod.
story a, tunud.
stout, melabong.
straight, matulid, makiting.
stranded (*of a boat*), makasangut.
strangle to, memontol, memontol du liog, bantoloh.
stream, susungoi, timog: upstream, darayoh; to go upstream, sumulok, makasulok: downstream, dabugus; to go downstream, mempiugus.
stretch to, lumanat, membirud.
strike, lambah, memalambah, linambah.
stripped, lumabas.
strong, maikang: (*of wind*) mapod: (*of taste, &c., pungent*) mapodos.
struggle (*to wrestle*), magagabuh.
stubble, nanantaban.
studded (*inlaid*), peropok.
stumble, makasadoh.
stump (*of tree*), tuod.
stunned, ka makaliman.
stupid, palui, kandok goang.
subsequently, taurih.
substitute, magalid.
succeed (*be successful*) mopud, makajadi: (*take the place of*) magalid, ginumanti: cf. "asai ginumanti disoh du maiioh" (who took his place as headman?)
suckle to, tomitih.
sufficient, samah, sukup.
sugar, (*M*) gula.
sugar-cane, tabu.
suicide to commit, nantuoh.

summit (*of a hill*), bolud, nolug.
sun, odoh, matanodoh (v. day.")
sunrise, sumilah.
sunset, melasah, lumasah.
support (*to prop up*), tetokud, tetansok.
sure surely, (*M*) tentu, topud.
suffeited, nasob.
surplus the, noantai.
surprised, metambungoh.
swallow to, tinolun, melanun, talun.
swallow (*the bird*), pandaiangan.
swamp a, ranau.
swarm a, sampanun.
swear to (*take an oath*), mopatod.
sweat, umos: to sweat, umasan, magumos.
sweep to, isasih.
swell to, menimbalud, menimbatal.
swelling in the neck, (goitre) anggok.
swift, menibok, (of water) mapuun.
swim to, domusok, nadusuh.
swollen, menimbalud.
swoon to, memukad: ka makaliman, to be in a swoon, unconscious.

T.

table, (M) meja: babaloi, a bench.
tadpole, tebulu.
tail, iku.
take, nakalap: (*imper*) alapoh: (*accept*) makiupah.
take away, ibitoh: ibitoh mogad ulun nginuh: 'take that man away.'
take care, ilai.
take care of, (*M*) piara.
tale, tunud, susuih.
talk to, daguh, mindaguh: (in one's sleep) magampuang.
talkative, mawad gilah.
tall, mesawat, of persons, malampas, melangoh.
tame, makaup.
tapioca, mundok.
taste to, iri, mengiri: a taste, iri.
tasteless, (*insipid*) mapaloh.
tatoo to, papak, mempakak.
teach, memumau.
tear, mauriak, mohriak: cf. 'ilai duih inuh, tentu mohriak kawal monoh': (mind the thorns, our clothes will be torn.)
tease, anjahan.
teat, titih.
tell (*inform*), berai, nomarah: (*order*) menusup.
temper, goang.
temple the, piping.
[*]**than,** ku.
that, talah, ginuh, nuh.
their, iroh tampoh, nanoh. (nanoh used after the noun, as M. -nya.)
them, iroh.
then, timpok inuh.
there, tio, tio nalah.
these, gitu, talah.
they, iroh.
thick, makapal.
thick-headed, palui, ka makagoang: kandok goang.
thief, mentatakoh.
thieve to, takoh, mentakoh.
thigh, paha.
thin, menipis: (of persons) metukal.
things, ('perkakas') kuliamas: (barang) M. barang.

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[*] The comparative is formed as in Malay, either with or without the word 'makalabih' (more) qualifying the adjective. cf. "Talah maiioh ku nallah."; or "Makalabih maiioh talah ku nallah."—This is larger than that.

think, mempikir: generally paraphrased, as "atok goang da moiun."
thirsty, kandok: goang ku nampas.
this, gitu, talah.
thorn, duih.
thousand, saliong.
thread, gapas.
threaten to, ilalânun.
throat, membalangan.
throb to, kibut kibut.
through, sumunsor.
throw to, memuas: mapatias, to scatter.
throw away, patidih: noatidan.
thunder, tumparak.
thus, koioh, koioh doginuh.
tick a, sudib.
tickle to, taligogonan.
ticklish, taligogonan.
tide (*current*) lintagup: high tide, lumuab: low tide, merasak, timog merasak, t. mosat.
tidy to make, nakiting: (*imper.*) itingoh.
tie to, mengkaput, (*imper.*) kaputi.
tie up to (*e g. a horse*), dakugi: (to bind *e.g. a wound*) bawodun.
tiger, mondoh.
tight, lanating, maikang: (*drunk*) magaup.
till, makasaboi, saboi: saboi inu, till now.
timbadau, membaras.
timber, tetaun: mentagad, to fell timber.
time, timpok: how many times? kain kora? at that time, timpoh doginuh.
timid, malâh.
tinsel (*beads*), manudirau, (*lit.* '*bright*').
tip the, munjok.
tipsy, magaup.
tiptoe to walk on, kamuda.
tired, numpai, gumpai.
to towards, du: (*as far as*) disum, domisum, makasaboi.
toad, pantong.
tobacco, (*M*) sigup.
today, odoh n'gitu.
toe, karindoh keraiam.
together, nagagundoh, mababaia.
tomorrow, sasuab.
tongue, gilah: mawad gilah, talkative.
too, tupoh.
tooth, dipun: mengasah, to file the teeth: bunganaliu, the canine teeth: bagang, the molars.
toothless, narangaban.
top (*e.g of a tree*), umbus: (*of a hill*) bolud, nolug.
torch, titiu.
tortoise, buh.
totter to (*as a drunken man*), mensiling siling.
touch, anggai, menanggai: menanggai karindoh, to shake hands.
tough, maikang.
tow to, dalatun.
towards, du.
track to, mengkakab.
track (*a narrow path*), atang.
track (*a footmark*), baiak.
trade to, (*M*) berdagang.
trample to, mongujok.
transparent (*as water*), mengining.
trap, sarigut, sesigut, jaling, nooses of rotan, used in deer drives: antob, traps for small animals, pelandok, etc.
travel to, mogad.
tread to, kedawih.
tree, tetaun.
tribe, (*M*) bangsa.
trigger of a gun, dalatun.
trip to, makasadoh.
troublesome, masusah.
true, topud, kepioh.
trunk, of a tree, tetaun.

trust to, mintopud, malansan.

try to, iri, mengiri.

tuba, tuoh: moipenoh, to fish with tuba.

turbid (*of water*), malutut.

turn to, (*intrans.*) lumikuad.

turn into, (*to become*) mawâl. cf. "butiting timbunus mawal du pait" (a shooting star becomes a fish.)

turn round to, lumikuad.

turn over to, (*trans.*) timpudokoh.

tusk (*of a boar*), lalangiu.

twilight, mundom.

twins, mongkobun, magabid.

twist to, mepilus, napuak: natoh ioh, mepilus keraiam noh (he fell and twisted his foot).

U.

udder, titih.

ugly, meraht, ka mapasau.

ulcer an, tupas: palakak, an ulcer on the foot, the 'puru.'

unable, ka makadapat.

uncertain, kapo napandaian.

uncommon, melambat.

uncooked, memata, bebata.

under, dariwah.

undergrowth, nomok: dumilik, to clear undergrowth, (as opposed to 'memtagad,' to clear big jungle.)

understand, makarerti.

unequal, ka nagagunduh.

unfasten to, sukabun.

unfrequented (*lonely*), masiruk.

uninhabited, nalasun.

unmarried (*of a man*), buaiyoi: (*of a woman*) darâh.

unripe, memata, bebata.

unsteady, menuntor.

until, saboi, makasaboi.

unwilling, matiad, ka mesagah.

up, to go, tomakad.

up, to climb, mengkeuah.

up, to pull (*as a weed, &c.*), menubul: (*imper.*) bebuloh.

up, to stand, somukal, kumakal.

up, to wake, (*trans.*) mengadat, (*imper.*) kadatoh: (*intrans.*) kumalat.

up and down, tumun om tomakad.

upon, disawat.

upset to, mesasad.

upside down, nalikuat.

upstream, daraiioh: to go upstream, sumulok, makasulok.

use to, (*M*) pakai, memakai.

use, (noun), (*M*) guna.

used to (*accustomed*), maindaram: (in sense of 'formerly') garing, pun noh garing. cf. "pun noh garing ih mamok keningau du Keningau gitu, daiitu poioh kandok bagoh": (there used to be a quantity of cinnamon at Keningau, now there is none.)

uselessly, palaloh.

V.

vain, makomoh, sumantuh.

vain in, palaloh.

valuable, matang, maiioh gatang.

value, gatang.

various, nakapinansusuai: cf. nakapinansusuai, makondoh ioh meriah makondoh mapurak: "of different sorts, some red some white."

vast, maiioh.

vegetable, inapah: punuh, the 'umbut,' (the palm-cabbage.)

vein a, uat, uat mosat.

venomous, mabisa.

venture, venture-some, banih.

very, kepioh: ka korah, not so very, (*M.* '*tidak brapa.*')

vex to, anjahan.

vexatious, masusah.

vicious, meraht.

victuals, lutuh.

vigorous, maikang.

village, pagun: memagun, to inhabit: sampagun, to live in the same village as another.

violate, ginabuh.

virgin, darâh.

visit to, mapid.

voice, daguh.

vomit to, mempaluah.

W.

wad, (of gun barrel) unal.

wade to, (breast deep) tongkorun.

waddle to, mengkilus kilus.

wag the tail, magusoh iku.

wages, (*M*) gaji.

waist, ansang.

waist-cloth, ('*chawat*') abag.

wait, makinah, danih: 'danih aku poh,' wait for me.

'wait a moment,' kapoioh.

wall, bumbong.

wallow a, luluiun: to wallow, magaluluoi.

walk to, mogad, makogad: to go for a walk, mabinsaloi.

wake to, (*trans.*) mengadat: (*imper.*) kadatoh: (*intrans.*) komalat.

want, mesagah.

warm, melassu.

***was,** noioh.

wash to, pupuiun: madioh, to bathe.

wasp, meningot.

waste to, patidih.

water, timog: sagoh, to take water from a stream in a piece of bamboo: semûk, menûk, to take water by means of a tin or bamboo tied at the end of a stick, or rope: cf. the Suk river, so called because water had to be taken in this way on account of crocodiles.

water to (*flowers, &c.*), uasih: to pass water, sumabuh: fresh water, timog mapaloh: salt water, timog mapadih.

waterfall, bosoioh.

wave a, lakun.

way a, baian, dalan: 'atok dalan moi du....?' (which is the way to....?)

way get out of the, lumisang.

waylay to, magawang.

we, akai: takau.

wealth, dapu.

weapon, aniban.

wear to, (*M*) pakai, memakai.

weary, numpai.

weave to, tinalud.

web of spider, tambunan.

well a, tagarusoh.

well, (*adv.*) mainseu.

wet, masah.

what? atok?

what's his name, ianu.

when? sangira?

where? atok aien, atoien?

where to? atolian?

where from, whence? atok intod?

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* Noioh is used to express the past tense, as Malay "sudah" e.g. Mopatoi noioh daih, he died yesterday. Noadil noioh ioh timpok ioh sagoh, she was shot while taking water. Nomatoi noioh taloh ulun. he killed three men.

wherever, atok atok.

whet to, magasah.

whetstone, pagagasah.

which, (*interrog.*) atok? 'atok kuih tampoh, gitu kia talah kia?' (which is mine, this or that?): (relative) (not used).

while, timpok: cf. 'he was drowned while crossing the river': nopatai ioh losud timpok ioh memeripag susungoi.

whine to (*of a dog*), mogaum.

whirlpool, diruh.

whisper to, mogokonus.

whistle to, magisisiup.

white, mapurak: -haired uan.

who? asai?

whore, mamalapau.

whorl (*of finger print*), diruh du karindoh.

whose? asai tampoh?

why? akiah? atok kosun? atok kosoi?

wicked, meraht.

wide, mapilah, dumopoh.

widow, mapod.

widower, magalang.

wife, andu.

wild, mesioh: (*of fruit, &c.*) kasarawan: used in sense of Malay 'utan,' as buah kasarawan, a jungle fruit.

*__will__ (*future tense*), daka (*seldom used*).

win to, (*M*) menang.

wind, (*M*) angin: angin mapod, a strong wind.

wind to, padunun, balunun, ginolong.

winding (*of a river*), talingkong.

wing, kawoh.

wink to, mangaritub.

winnow to, meniri.

wipe to, arus, magarus, mengkaiah.

wire, (*M*) dawai.

wise, makagoang.

wish to, mesagah.

with, du: "ioh memalambah daki du burong": (he struck me with a parang).

withdraw to, lumisang, lisang.

witness a, (*M*) saksi: (*to see*) mokitoh.

woman, doandok.

wonder to, metambungoh.

wood, tetaun: tagas, bilian: panopok, 'selangan batu': opil, ipil, mirabau: banati, temasu: jahalan, camphor wood: tambulalas, a hard wood that sheds its bark.

woodpecker, pempalit.

work, (*M*) kreja.

worm, ulod: lingguong, the tape-worm.

worn out, gansing, mapasah.

§**would that,** dan.

wound a, ramat.

wounded to be, maramatan, mepidis, matimpasok.

wound one's foot, (*with a thorn, suda, &c.*) makasumpak.

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* e.g. "Makajadi poioh, daka aku domatong sangodoh sasuab.'' or Makajadi poioh, aku domatong...' (If possible I will come tomorrow).

§ Used at the end of the sentence, e.g. 'Domatong ioh dan, baguh om mainseu goang ku.' (Would that he would come, then I shall be content 'Domassam iak dan...' (Would that it would rain...)

wrap up to, mengkaput, lapotun: (*imper.*) kaputih.

wrestle to, magagabuh.

wriggle (*as a snake*), mengkilus kilus.

wrist, tantod.

wrong, (*M*) salah, ka mapatut.

Y.

yawn to, maguap.

year, bilod, sambiladan: reckoned by the padi harvest, ('bilod,' padi) from the time the jungle is cleared, to the end of the 'panawongun',[2] roughly 13 months.

yearly, every year, bilod bilod: cf. "membalai takau bilod^2 wang kepala": we pay poll-tax yearly.

yell to, lumakuih, gumagang.

yelp (*of a dog*), mantangak.

yes, iau.

yesterday, daih: the day before yesterday sanda daih, sangodoh daih.

yet not, kapoioh.

you, okkoh, koh, diun: (*plur.*) da moiun, kanah.

young (*of persons*), dalaing: (*of things*) melabong.

your, (*sing.*) okkoh tampoh, moh: (*plur.*) da moiun tampoh, moh.[3]

Z.

zealous, merajin.

zigzag, malikoh, madiruh diruh.

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[2] 'Panawengun', the two months after harvest before the new crop is planted.

[3] Moh is used after the noun, as 'Korra dangan moh?' How many companions have you?

Additions to a Vocabulary of Brunei-Malay.

BY G. T. MACBRYAN.

Having seen the above vocabulary in the April number of the Journal I venture to forward a few words which I think are peculiar to Brunei-Malay and are not included in Mr. Marshall's list.

I also have the temerity to enclose a list (B) of words of which I have always found a different meaning to that given by Mr. Marshall or a different pronounciation.

Anai.		White-ants.
Antah.		"I Don't know" (*Entah,* Sarawak Malay).
Bagong.		Boat, a boat of same make as "*Koleh*" (S'pore).
Bari.		To give = *bri.* Also *membari* and *bra-kan,* (*bri-kan*).
Benasa.		Broken, smashed.
Bergalap.		To play.
Berjarang.		To cook.
Berkasi.		To sneeze.
Berlurih.		To obtain, catch (*ber-ulih*).
Bersual.		To answer back.
Biang.		Friend.
Bini.		*Bini-bini* = Female of human beings.
Dami.		Like, manner. As *dami ani* = like this; *dami-atu* = like that.
Gulaian.		Vegetables cf. Dayak *gulai* = mix.
Jangkau.		To reach out (of the hand) conf. Winstedt *menyangkau* (Selangor).
Jilama.		A man, human being.
Kada.		*Kapada* = to (*Brakan kada dia* = give to him).
Kepang.		Shingle (of roof).
Lalai.		Slow.
Lundong.		Lazy.
Malai.	(1)	Compassion, good feeling. (High-class Brunei) conf. *Milanau* "*lai.*"
	(2)	Accustomed, used to = *biasa.*
Manas.		Beads.
Pachah.		Blind (*pichah*).
Pampang.	(2)	Stocks.
Paya.		Swamp.
Payah.		Troublesome.
Ruang.		A numeral co-efficient used of boats, etc. *Gobang saruang* = one boat.

Sambat.	Early.
Tadak.	Tattooing v. = *bertadak* (Sar. *Tedak*).
Tambus.	To come out = cf. '*tebus.*'
Tamu.	Meeting place (lit) for trading purposes, market, conf. *bertemu.*
Tebassan.	A farm lit; 'a clearing.'
Tempuan.	A short cut (a path cutting across a tanjong).
Tuhus.	To recede (of water, of flood in river).
Uchap.	Speech verb = *beruchap.*
Undang.	Prawn. *Undang siar* = the sea prawn. *Undang galah* = large fresh water prawn.

List B. Variation from usage given by Mr. Marshall.

No.	6.	**Alai.**		To dance (specially a war dance) not "to play music."
„	23.	**Antai.**		*Entai.*
„	60.	**Bebun.**		To collect, gather together.
„	74*b*.	**Beribun or Bibun.**		To talk nonsense, trifle.
„	116.	**Indong.**	*a.*	Female (of an animals) cf. *bini.*
			b.	Mother or aunt (of human beings).
			c.	The principal, most important viz. *tiang indong tangan.*
„	127.	**Ekong.**		*Ikong* (long ēe).
„	128.	**Endah.**		*Enda.*
„	130*b*.	**Eris.**		*Iris sa-iris* = a slice cf. *mengiris* = to slice cf. Winstedt *hiris* = slice onions.
„	143*b*.	**Gelaga.**		*Gelagah.*
„	174.	**Jangku.**		*Jang-ku* = said I. (Maxwell's translation correct).
„	196.	**Kalabat.**		Gibbon monkey. (*Wa-wah*).
„	266.	**Luargan.**		*Luagan* or *logan* meaning a lake or pool.
„	409.	**Siabun.**		*Sabun.*
„	450.	**Tajok.**		The meaning given by Mr. Marshall is the usual Malay meaning, but I have always heard Brunei's use this word with reference to the frame-work supporting the roof of a boat. The same as the "*Kundang*" of Sarawak Malay conf. Dayak *tajok.*

The *Akuan* or Spirit-Friends

BY ZAINUL-ABIDIN BIN AHMAD.

> There are more things in heaven and earth, Horatio,
> Than are dreamt of in our philosophy.
>
> Shakespeare's *Hamlet*.

Akuan is the term generally in use among Negri Sembilan Malays to designate the Spirit-friends which certain individuals among them are believed to have from among the inhabitants of the spirit-world. Other terms are used in other parts of the Peninsula, and the belief varies with different states in matter of details. In this paper I am speaking of it as it obtains in the "Nine States," particularly those portions of it inhabited by the descendants of the old Mĕnangkabau tribes. The persons credited with the possession of the spirit-friends are usually those having some pretension to the knowledge of a *pawang*, a diviner, or a medicine-man. They may be men or women, "wizards" or "witches," but in either case they are almost always past middle age. The word *akuan* is derived from *aku,* to own or to claim as one's own; while the thing owned is supposed to be a spirit which may either remain in its natural airy state—a sort of Ariel to the Malay Prospero—or may take the shape of the body of some animal, ordinarily a tiger, for its permanent residence. The "owner" may possess one or both of these two types. But if he is master of the first type, he is as a rule master also of the second. As for the first type, their "owners" are mostly men, and the number of *akuan* belonging to each owner is always more than one, ranging from three or four to a dozen or more. They may be male or female, but more often the latter if the owners are men. Their relationship to the owner is, without exception, that of old acquaintances rather than of intimate friends or of servants and master. Hence, they are less under control and never so devoted to the owner as the animal type. Some far-off locality is assigned to each of them as dwelling place—such and such a mountain, rapid, *kĕmpas* tree (*Cumpassia malaccensis*), ravine, plain or forest. The names by which they are mentioned are not proper names, but merely epithets descriptive of their sex and dwelling. They do not come unless ceremonially conjured in a solemn séance-like fashion. This is only done when their aid is imperatively needed on the occasion of very urgent sickness which has taxed all the wit and skill of the medicine-men to cure. Otherwise it is considered improper or even sacrilegious to mention them.

The method of conjuring them, which is more or less the same in main details for every "owner," may probably be of some special interest to students of modern Spiritualism. A general description of it like the following which has been gathered from a number of villagers who have themselves seen the proceeding independently of each other at different places and times, may be obtained almost anywhere among the rustic population of Ulu Jĕmpul, Kuala Jĕmpul, Batu Kikir, Juasseh, Sungai Dua, Sĕri Mĕnanti, Rĕmbau, Jĕlĕbu, Lĕngging, Bĕranang and other places. The ceremony is called *Bĕrĕjin* (from *Jinn,* genii or demon) or *Bĕrhantu,* literally to call up spirits or to have spirit-meetings. It is always performed during the first part of the night at the patient's house, and occupies some three hours, say from 8 to 11 p.m. The function being one not often met with, the people within one mile and a half around regard it with great interest and come to attend in crowds. The "owner" of the *akuan* plays the part of a medium, and some one, usually his wife or one of his closest lady-friends or pupils, takes up the rôle of an interpreter, as the medium will talk in some language unknown to the uninitiated audience. Before the meeting begins the preparations for it have to be got ready. This consists of *bĕrteh* (toasted wet rice-in-the-husk), three or five or seven pots (*pĕrĕni* or *buyong*) of water, betel-leaves and all their accompaniments arranged in the most ceremonial manner in a richly ornamented *bujam,* or *pĕrminangan.* To all these are added new, rich little mats, spread specially for the expected spirit-guests, so that the scene presented "is just like one when there is going to be a marriage ceremony" (*macham orang na' nikah*). All the relatives and friends of the patient are informed and asked to be present, as the occasion will finally settle whether the sickness is curable or fatal. As the expected hour comes, the actor of the evening arrives. All is now solemn and silent. He takes his seat on the rich mat reserved for him near the other articles of preparation. He veils his face, and then recites some strange songs of invocation in a weird appealing tune, and in a language partly unintelligible. He begins to be unconscious as the trance state of mind gradually overmasters and takes possession of him. He shivers terribly while the smell and smoke of the burning incense (*kĕmĕnyan*) becomes suffocatingly diffused in the air. He may dash his hands and feet against the floor and his body against the wall. He may even rise, walk about the room, throw off his veil, disclose his flashing blood-shot eyes, sit upon the earthenware pots, snatch some of the red-hot cinders from the incense-urn (*pĕrasapan, pĕbaran* or *tĕmpat bara*) and chew them in his mouth—all these without causing himself the least injury. The house shakes and the spectators are full of awe. As the medium grows more and more frantic in his movements and recitations, the spirits invoked come one by one. Sometimes only one of them turns up, the others excusing inability. If they are Moslems their greeting on arrival would be "Assalāmu 'alai-kum" communicated through the medium by the interpreter. Those of them who are not Moslems employ some other polite formula. At each arrival the interpreter introduces the guest to the audience—as Dato' of this mountain or that mountain, etc. They are, of course, not visible but to the unconscious medium who, through the interpreter, most politely motions them each to their reserved seat. When all have arrived and seated themselves, one of them asks: "What is it that you all want, friends, that you call us? We shall always be pleased to do you any little service that we can." These words are spoken by the medium to the interpreter in a strange language. On their being interpreted, the relative sitting closest to the patient speaks out, describing the patient's sickness, the length of the time he or she has suffered, the powerlessness of the medicine-men to cope with it, and asking for an explanation of the cause, the possibility of cure, and the treatment for such a cure. The interpreter communicates this to the medium who, as the embodiment of all the spirit-guests for the time being, replies after a few minutes' real or pretended meditation. The reply will be that the sickness was caused by such and such evil influence (*kĕtĕguran* or *badi*), malicious persons (*di-buatkan orang*) or whatever it may be, at such and such place and on such and such occasion: that such and such is the treatment for its cure. Or he might say: "This so-and-so's sickness is incurable. There is no hope. Be resigned." If many of the spirits are present, they all agree in the decision given. This done, they all leave; and after some half-an-hour's more exertion, the medium comes back to his senses, extremely exhausted. He will immediately quit the house without a word, and go home accompanied, it is alleged, by "his" mysterious tiger.

On the other hand, if the *akuan* is one that permanently assumes the form of an animal, it is to all appearance sexless. Even if it belongs to any particular sex, the distinction is regarded indifferently. As for number, never or very seldom more than one of such animal-*akuan* belong to any one master. But that one acts towards him more like a faithful attendant than a far-off friend. The animal is not known by any special name. Its dwelling place depends upon the nature of the animal whose form is adopted by the spirit. Mostly the form adopted is that of a tiger, and so it lives in the forest over which it is supposed to wander like all ordinary tigers. Its assistance is not invoked, as it is always ready to help when the need arises, provided such emergency occurs, so to speak, within its "sphere of influence," that is to say, where it can make its appearance consistently with its natural form. A tiger, for instance, cannot live in the water, but in the jungle or in the dark it can render services to the "owner" in many ways. When he loses his way in the forest, the tiger would come and lead him out by distinct marks and scratches on the ground. He has no cause to fear anything, as the spirit-beast is always close by, assuring him of assistance and protection by making familiar noises. Those in the company of the "owner" at such times may feel justly frightened. The more courageous of them may be inclined to use their weapons. But the master of the *akuan* will keep on urging: "Be reverent and silent. It is nothing. It is our protector. It need not cause any alarm, nor should any harm be done. There is no danger." And so on and so forth. What he says always turns out true, and never a mishap has been heard of, though the monster really does keep pace with them not many yards away. Besides these the tiger would do the master other services also. Such little courtesies as scaring away thieves and mischief-makers from his house are common-place examples. Popular belief goes even so far as to say that, in extraordinary cases, the "owner" even rides on the tiger when he goes out at night.

I knew an old woman at Bukit Kĕrdas (Jĕmpul) who died three years ago and who, besides having a reputation as a fairly successful medicine-woman, was believed to have *akuan* of both descriptions. The spirit type were seven in number, scattered all over the country, and the animal type was in the form of a tiger. Her husband from whom, it is said, she inherited these *akuan* as well as her art of medicine, had died many years previously. Many people believed that the husband turned into a tiger after his death (see "The Tiger-Breed Families" Journal 85, pp. 36-39) and that the tiger-*akuan* was no other than himself. The spirit-*akuan* were conjured many times. Once the old woman herself was seriously ill. In her illness she herself invoked their assistance, and she got better. But during her last illness nothing came, and she died. The tiger-*akuan,* on the other hand, used to accompany her when she went into the forest, or was going out at night. Besides, the animal always came to the rescue whenever she or any member of her family happened to fall into circumstances which made them wish for companionship and protection. Many curious incidents occured as evidence of the animal's attention. One, quite romantic, was as follows: The old woman had a pretty daughter (who is still alive). As is usual with love-sick Malay swains, those who entertain a fancy for a girl, delight to go stealthily to the house of their lady-love at night to be able to steal fuller glimpses (*mĕngintai*) of her face and doings than they could ever do anywhere during the day. Now, in the present case, two lads were specially enamoured of the young lady. One night the two arranged to go to *mĕngintai* to the house. Many friends had warned them that the house was always guarded by the old woman's tiger. But partly impelled by the desire to test the report and more especially by mad love, they decided to act against the warning. When they reached the house and each had taken up a position to command the view through the chinks in the bamboo walls and floor, they succeeded in enjoying the coveted sight only for a few moments. On one of them turning round to relieve his strained neck and eyes, he found himself, to his unspeakable horror, face to face with a tiger, sitting about two yards from him and watching apparently with great interest what he and his companion were doing. He pulled back his companion and the two had to beat a retreat as stealthily as they had come, and make the best of their way home, resolved never to try the experiment again in future.

Another one: On one occasion the old woman was spending a night at a friend's house about half-a-mile away, leaving only her daughters and grand-daughters at home. As they were sitting with their mat-plaiting and basket-work and chatting light-heartedly they heard the silent panting of an animal like a cow under the house. On turning their torches upon it to see what it was, they found it to be a tiger. So terrified were they that they put up wild screams for help till people came, and the tiger sneaked away into the darkness. (I can vouch for so much of the story as a fact, for I was one of those neighbours who heard the screams and went to help). The old lady came home and told them that the beast was only keeping them company and protecting the house. If they had harmed him, she told them, some terrible catastrophe would certainly befall the family. On another occasion, the old lady with three of her granddaughters went out *mĕnimba* (*i.e.* fishing by baling dry the water of a shrinking pool and then catching the fish—a favourite pastime in the village during the hottest part of the year) at a certain pool close by the road-side. When they had baled the pool dry and were beginning to secure the fish, one of the party saw two tigers crossing the road in their direction from the thick jungle on the other side. The grand-mother's attention was instantly called, and she, realising the danger, had no other alternative but to tell them to be quiet and calm. Suddenly from beneath the scrub, a few yards away between them and the two tigers, rose a third and bigger tiger. Without seeming to notice the panic-stricken youngsters, the beast walked right towards the advancing pair, and after persuading them, as it seemed, to turn to another direction, he marched away from the scene. The two followed suit. But the young girls could not regain control of their nerves, and their grand-mother had to hurry them home, taking only whatever fish they had caught and leaving the remainder without further search.

It may be added as a digression that the grave of the old lady's husband used to be regarded by many as an object of pious reverence. The *chĕmpaka* trees (*Michelia champaca*) planted over it were overhung with strips of white cloth (*panji-panji*) as emblems of sanctity, and indications of the number of "vows" (*niat*) that had been paid there. I daresay they still continue to be so overhung at the present time. Credulous people have for long been attracted to "make their vow" by the grave. Incidentally, this practice may be described here in a few words: A person, for the fulfilment of some great prayer, "makes a vow" saying: "If I recover from this illness" or "If a male baby be born to me" (or whatever that desire is) "I will cut two goats at so-and-so's grave and call people to eat there." If the prayer is granted he goes there to execute his promise. He cuts (*sĕmbĕleh*) the promised goats or whatever it may be; cooks some saffroned-rice (*nasi kunyit*), invites people to eat, has prayers of thanksgiving (*do'a sĕlamat*) read for him by some *lĕbai,* (cf. Skeat, *Malay Magic,* p. 42), and fires some big crackers as expression of peace and joy. Thus he "pays his vow," discharging himself of the binding promise he made to the spirit of the grave. If he fails to do so the spirit will appear to him in a dream demanding fulfilment, and in case of further default some untoward event is certain to follow.

One more story about the tiger-*akuan* will finish the matter. A man living in Mĕmpanas, an outlying corner of Kuala Pilah, on the right bank of the Muar River, told me that he once had a long illness. No effort of the medicine-men was spared to restore him to health, and yet he did not recover. But he had a tiger-*akuan* which, by the way, he is believed to have even now. During his delirium the animal appeared to him and told him that his affection had become chronic and that his only chance of life would be in having his body licked by it. On coming to himself, he told this to his people and asked to be exposed the following night in the open verandah without any light. This was done. The door was bolted and the people kept themselves inside breathlessly watching what was to happen. The tiger came, stripped him naked and began to lick all over his body, so that the "lip-lap" sound of its tongue was clearly heard. Then it went away leaving him drenched with its salivary fluid. Two days after, he was completely cured.

The *akuan* in the shape of any other animals than tiger is probably very rare. I have heard only of one single case, occurring in Juasseh, where a certain man is reported to have a *crocodile-akuan,* living in the river opposite his house. He feeds it, treats it kindly and at his call the animal comes up to the surface. He is even said to ride upon the animal's back when necessary. Nobody but he dares to bathe in that part of the river. The crocodile is always there. According to his own story, the spirit came to him in a dream asking to be "owned" and protected (*bĕla*) in return for which it would look after the water-supply of his paddy-fields, bring him luck and protect him and his family from evil spirits. He accepted the offer and was told that he could always find the new friend in the shape of a crocodile in the river opposite his house. The next day he found this to be true, and thenceforward he has been the "owner" of the crocodile. The terms of agreement seem to have been faithfully adhered to by both. The man gathers in a good harvest every year,—quite above the average,—is always at ease and contented, and never gets ill, neither any member of his household. One striking fact about this case is that *the "owner" is no medicine-man.* The animal is not to be harmed, or all the benefits accruing from its friendship will be withdrawn, and some disaster threatened to the unfaithful "owner." Before the animal came to this man it had offered itself to a woman-neighbour of his. But on its commencing to stay in the river in front of her house, the woman's people disturbed it with sticks and fish-spears (*tirok*) so that the animal could not rest in peace. When it was leaving the place, the woman had a dream in which the spirit said to her, "I (*awak*) desired to act to your profit, but it seems you do not care to have my service. You disturbed me. Now I don't want to have anything more to do with you. If you want my friendship again you must sacrifice one of your children to me." I do not know if any similar case occurs anywhere in the Peninsula.

To sum up; such are among the alleged phenomena purported to lend support to the numerous spirit-beliefs of the Malay peasantry. An upholder of the doctrine of Transmigration of Souls may possibly be tempted to suspect some connection between this *akuan*-belief and the doctrine. But apart from mere suspicion, there is nothing in the popular conception of it to show that its believers have even the barest idea of that theory. The "owners" themselves never have any such idea. But that the *akuan* may pass down as a legacy from parents to children or from a dead husband to a surviving wife appears to be a generally accepted possibility. With the introduction of modern ideas and surroundings the belief in *akuan* is gradually dying out among the younger generation of Malays. But among their old-fashioned elders of the purely conservative type, whose contact with this new influence has not gone to any extent beneath the surface, the grip of the belief and other kindred superstitions is still very strongly in evidence. However, it is remarkable that in matters of this kind, investigators can hardly have much data to go upon owing to the scarcity of "actual cases." One must also allow for the Malay habit of exaggeration and their fondness for the marvellous and mysterious. The same applies to the wide-spread belief in *polong, pontianak, pĕnanggalan, pĕlĕsit,* etc., etc., which is now confined only to the most superstitious. The difference between the *polong, pontianak,* etc., and the *akuan* is that the former are malignant spirits, kept for inhuman purposes, (cf. Skeat, *Malay Magic,* pp. 327-331) while the latter are good and serviceable auxiliaries.

The Muhammadan religion, it is true, discountenances all such belief in the powers of the devils. Any recognition of a power, other than God, as a being superior to man is repugnant to it. But ignorance is as much a power as knowledge: where it exists the impossible becomes possible. The most opposite beliefs and doctrines can subsist side by side in two water-tight compartments in any raw and uncultivated mind. And so it is with the majority of the Malays. With all these they "are among the most orthodox of Muhammadans."

Points of the Compass in Kedah.

By A. W. Hamilton.

Amongst the inland Malays of Kedah more especially in those districts where the Siamese language is still prevalent the usual Malay terms for expressing the points of the compass (utara, sĕlatan, timor, barat), are not in use except as designations for the direction of the wind and the seasons dependant on them (*i.e.* angin barat a west wind or musim timor the N. E. monsoon).

The current terms in use in daily life to express the relative positions of objects or the direction of a road, etc. are as under:—

North.	Kaki tidor.
South.	Kĕpala tidor.
East.	Mata hari naik.
West.	Mata hari jatoh.

A man will thus describe his house as being sabĕlah kĕpala tidor or South of somebody else's abode; and if asked where he was sitting with reference to another person might reply "dia dudok di sini, dan saya dudok di sabĕlah kaki tidor nya" *i.e.* he was sitting here and I was sitting on the north side of him.

The expressions mata hari naik and mata hari jatoh are of course common to the whole peninsula and the sentence dia sudah pĕrgi sebĕlah mata hari naik. He has gone East would be understood anywhere.

The curious local expressions kĕpala tidor and kaki tidor appear to have arisen from the invariable orientation of Siamese houses which are built with their axis East and West, the entrance facing the rising sun.

The occupants when lying down for the night in their rather narrow dwellings are thus constrained to lie across the house with heads to the wall and feet to the centre so that all the heads in a village will be pointing one way, kĕpala tidor or South, and all the feet another, kaki tidor or North.

The Grave-Stone of Sultan Mansur Shah of Malacca.

By Zainul-Abidin bin Ahmad.

The following suggestions with reference to Mr. J. P. Moquette's scholary paper on the above subject translated by Dr. Winstedt in J. R. A. S., S. B. No. 85 may not be out of place here:—

(a) That the word المرحوم which comes *after* مظفرشاه in Mr. Moquette's reading of Plate I be placed immediately *before* مظفرشاه; firstly because *that is* the usual order (i. e. *al-marhûm* first and the name of the deceased following) when the expression is used, especially by the Malays; and secondly, seeing that the word السلطان which lies directly above the word منصور, (see third line in Plate I) is read *before* منصور , it follows that the word المرحوم which lies also directly above the name مظفرشاه can also be read first. As far as I can judge from the plate, nothing seems to be there that makes it particularly necessary to violate usage and read المرحوم last.

(b) That the reading of دارالمآل (dári-'l-ma'ál) be substituted in place of دارامال (dári ámál). For this I have several reasons:—

(1) دار آمال is not compatible, as far as rhythmic flow is concerned, with دارالحال with which it ought to correspond; because the latter (i.e. دارالحال) has the article أل and the former has not. From a grammatical stand-point there does not appear to be reason enough that دارالحال should have the article and دارآمال

should not. But if, to avoid all this, we use أل and say دارالآمال, the clear-cut shape of the word in the inscription does not justify our doing so.

(2) آمال is the plural of أمل , and the word "hope" which is given for the translation can only be suitable if the Arabic is in the singular form. Besides, آمال is pronounced with a long vowel on the first syllable, and thus spoil again any rhythmic agreement with محال of which the first syllable is short.

(3) If the form المآل is substituted, the agreement in rhythm with المحال is readily established, for the two would then be of the same form (noun of place) derived from roots of the same measure. The combination makes a perfect little rhymed-prose, with apparently punning sound—a feature so commonly prominent in short Arabic maxims and pithy sayings—such as would become any epitaph.

(4) The meaning of دارالمآل which is "the abode of return" or "The Final Abode" would just suit دارالمحال which is the "abode of change" or "The Transient Abode".

(5) In an inscription where, as in any monogram, the letters and different parts of the words are highly interwoven, it is not uncommon to find that one and the same stroke serves the double purpose of representing two letters of like appearance, or that two or more letters of more or less the same form become blended into one, or even die away in the meshes of loops and flourishes. In this light I think we are quite justified to assume that in the inscription the first "l" of the word المآل is partially blended in the final "l" of the same word. (See the first line of Plate II).

No doubt the changes suggested here are not of much consequence. Still I hope they make for some improvement on the reading so far deciphered.

It might be well also to call attention to the little misprints in spelling, which might be overlooked and might later lead to real mistakes:—

(a) The first السلطان (*as-sultan*) in the reading of Plate I should be written للسلطان (*lis-sultan*) as we find it correctly written in the Romanised reading; and the word منوصو(ر) should read منصو(ر)

(b) The words يسم الاربعا on page 3 should, I think, read يوم الاربعا

(c) The words ليس الدنيا (*lais a'd-dunia.*) in the reading of Plate III should read ليس للدنيا (*laisa li'd-dunia*).

That the "n" of السلطان and the "r" of Mansur cannot be traced may indeed be due to the mistakes of the mason. So also may the absence of any dots or diacritical points (*titek*) from the inscription be accounted for. But it is quite possible also that both have their explanation in (b) 5 above, or may have been worn out because of their smallness.

On any other matter regarding this subject, I am not able to form any independent idea; nor have any strong view to express beyond that, in my opinion, the reconstructions are really very ingenious, and the reading certainly much more acceptable than the one which used to be accepted before it.

The old Kedah-Patani Trade-route.

BY A. W. HAMILTON.

A glance at the map will shew that the whole length of the boundary between Kedah and Siam from the Perak border to the Perlis frontier consists of irregular masses and chains of hills rising in places to a height of more than 3,000 feet.

The actual boundary is an imaginary line between certain fixed points on the crests of these hills following the watersheds so that all streams flowing westwards are within Kedah territory and these flowing to the east within the dominions of Siam.

The whole of this frontier region is covered with a thick forest growth which renders it almost impassable except in certain naturally favoured regions to the passage of human beings.

In the course of time man in his journeyings has discovered the easiest passages through this chain of hills and has gradually confined himself to certain definite tracks which usually follow the beds of streams until some suitable vantage point is reached for crossing the divide.

From very early times it must have been known that the easiest and most direct trade route between the thriving Malay States of Patani and Kedah was through the defile known as Gĕnting Pahat. The chiselled-out pass (Boundary Stone No. 34), and until the completion of the railway from Patani to Senggora and its continuation thence to Kedah this route was still in vogue for the droving of cattle and the passage of Patani field labourers to Kedah territory for the rice harvest.

As this route in its latter stages has seldom been traversed by Europeans and as the rapid development of road communication in Kedah may at any time bring it into prominence again a short description of the route as it was in June of this year may not be without interest.

Leaving Alor Star in a motor car a short hour's run along a new and good road brings the traveller to Kuala Nĕrang twenty miles distant where the road ends on a bluff a hundred feet above the river and some two hundred yards below the confluence of the Padang Tĕrap and Pĕdu streams. Kuala Nĕrang is a growing village and the headquarters of the whole district of Padang Tĕrap which stretches as far as the Siamese frontier.

Crossing the river at this point the route follows the right bank of the Padang Tĕrap stream sometimes approaching within a stone's throw of the river and at others diverging from it to a depth of half a mile or more owing to the sinuous nature of its course. The country is open and roughly cultivated by Malays who have planted sporadic groves of coconut durian and other trees whilst themselves living near the banks of the main river and planting rice wherever the configuration of the ground admits.

The first kampong of any importance is Bĕlimbing after which at about the third mile a range of low hills called Bukit Kĕpah is encountered which have to be skirted before emerging on the plain of Padang Tĕrap which used to be the site of the headquarters of the district until they were moved to Kuala Nĕrang some eight years ago.

The path now crosses the Sungei Sari a small shallow stream which descends from the region of the mines at Pintu Wang and touching the outskirts of the villages of Padang Chĕnĕrai, Poka and Pĕring leads to the kampong of Padang Sanai where there is a Police Station on the banks of the river.

The distance from Kuala Nĕrang to Padang Sanai is roughly ten miles and the traveller who wishes to do so may return from here to Kuala Nĕrang by perahu being poled down stream in twice the time which it takes to walk.

Leaving Padang Sanai the way at the end of a mile passes through the village of Pĕngkalan Pa Tanai where there is a Siamese wat of bamboo construction and then fording the main stream which is by now only a very clear burn running swiftly over a bed of shinning black boulders and pebbles strikes for Kuala Sĕraya where there is a moribund Quarantine Station with a solitary Malay in charge and an already defunct Police Station.

The distance of 3 miles between Padang Sanai and Kuala Sĕraya consists of a stretch of flat open and almost park like land dotted with young trees of no great height, but after this the country becomes more thickly wooded and its surface is broken into ridges whilst the path follows the parent stream more closely and every now and then descends into it and emerges on the further bank only to cross the sector of a bend and dip into the stream again.

At Kuala Sĕraya the stream divides the left hand branch proceeding N. W. to Kampong Sĕraya 3 miles distant which is a large village of some sixty Malay houses, whilst the main stream continues on to Kampong Durian Burong which is at a like distance from Kuala Sĕraya.

Between the Quarantine Station at Kuala Sĕraya and the village of Durian Burong which is a Malay village of 20 houses standing pleasantly in rice fields and groves of coconut and betelnut palms there are no human habitations, and the country remains untouched except where it has been cleared at various times in patches for the cultivation of hill padi or maize.

The hills now begin to close in on either hand and form a rough wedge into the heart of which the traveller proceeds. Two miles after leaving the village of Durian Burong the path debouches into a little glade in the hills dotted with fruit trees which have run wild and having all the appearance of a deserted village.

This is indeed the case and the only name by which it survives in local memory is Kampong To Naidam Mok after an old Siamese of that name who last held the position of Naidam or official in charge of cattle quarantine and dues at that spot.

The track here branches into two that on the right leading through the Siamese district of Tiba to Patani whilst that on the left entering the jungle follows the rough course of what may still be termed the main stream for some two miles further to its source at Batu Kĕlikir (Boundary Stone 31) where there is an imperceptible gravelly watershed leading into the Siamese district of Chĕnak whence there is an easy descent to the village of Ban Pĕkop some two miles distant from the frontier and inhabited by Malays.

The path on the right winds round the shoulder of a hill for a mile and then enters the little village of Pĕrduan Sungkai situated near the banks of the Sungei Timun another small rivulet which comes down from the frontier and joins the stream from Batu Kĕlikir a short distance below.

This little village of less than then ten houses is the last outpost of Kedah territory in this region and is inhabited solely by Siamese who do not speak Malay and live by a little general cultivation of maize and hill rice though they also possess a series of diminutive rice fields.

The way now lies through the heart of the forest covered hills and follows the winding course of a boulder strewn stream the Sungai Gĕnting Pahat which mounts gradually.

In places the path actually follows the bed of the stream but generally a way has been found along the shoulders of the impending hills which hem it in when not too steep and consequently owing to the easy gradient and the absence of any stiff climbs the walking is comparatively simple.

At the end of two miles the stream continues its course along the hillside to the right whilst the path takes a sharp turn to the left and enters a narrow defile or cutting on the very crest of the hill through which can be seen the bright sky on the further side. it merges into the slopes of the hill on either hand.

This cutting which is the actual Gĕnting Pahat is some fifty yards long by ten feet deep and though only 3 feet broad at the bottom widens gradually from the height of a man's shoulders until it merges into the slopes of the hill on either hand; it is probably due to the action of two small streams rising on different sides of the watershed eating back gradually until their valleys have coalesced.

The walls of the cutting are composed of reddish earth plentifully mixed with small black pebbles and may have been shaped as the name appears to imply or merely be due to the wearing effects of traffic. In the centre of the cut is the boundary stone (No. 34) which divides Kedah from Siam and at the end of it in Siamese territory is the prostrate trunk of a giant Mĕrbau which has defied decay for many a year and is regarded as a kĕramat whereon the suppliant or thankful passer by lays a stone of propitiation. The nearest village in Siamese territory on the further side of the border is Sĕnaok some two miles distant whence the way is open to Patani.

Some rhyming Sayings in Malay.

By A. W. Hamilton.

From time to time the diligent listener and gleaner of unconsidered trifles will during his intercourse with Malays happen upon little scraps of proverbial lore or the rhyming equivalents for such which are part of the common stock in trade of conversation but are not to be found in any printed work on the language.

Of such are the following which have been collected no further afield than in Singapore and Penang and in the localities where they are current it is only necessary to quote the first line to convey the meaning contained in the second.

1. Pinjam ekor sĕmbilang;
Pinjam pinjam hilang.
To lend the tail of a sĕmbilang fish:
To lend continuously is to lose.

A caustic remark applicable to a goodhearted person who has lent an article once too often, or to an importunate borrower.

2. Mĕrpati mĕmbunoh kĕra;
Bĕlum mati bĕlum jĕra.
The pigeon slays the kĕra monkey:
Only when dead will you profit by experience.

A saying applicable to a person or child who persists in a course from which he has been advised to desist.

3. Takok takal muka pintu;
Orang nakal memang bĕgitu.
Cleave the block in the doorway:
That is the inevitable result of being naughty.

A reproof administered to a mischievous child who has perhaps fallen down and is crying over a trifling hurt.

4. Ikan tokak makan mĕranggong;
Sĕdap tĕkak badan mĕnanggong.
The tokak fish bite two at a time:
If you indulge your appetite your body must bear the
consequences.

A jibe at the expense of a person suffering from the effects of a debauch of any description.

5. Tua tua kĕladi;
Makin tua makin jadi.
Old as an aroid tuber ages;
The older, the more there is of you (i.e. the worse you become) or
Tua tua lĕngkuas;
Makin tua makin buas.
To age as a lĕngkuas ages:
The older you are the wilder.

A scathing remark sometimes addressed to a man who on account of his years ought to know better than to indulge in the frolics and pursuits of youth.

6. Kalau ta' chĕngal giyam;
Kalau ta' kĕnal diam.
If its not chĕngai wood it will be giam:
If you dont know, keep quiet.

A joking repartee often addressed to a person who is at a loss to answer a query as to the name of a tree or other object.

7. Bukan kĕtam tarah;
Bukan makan muntah ka darah.
It has not been planed only rough hewn:
It has not been a feed but an orgy.

An appreciative remark after a plentiful repast to which justice has been done.

8. Mĕrono Mĕrene sa gantang garam;
Kasana Kamari hari sudah malam.
Come here, go there, a gantang of salt:
Thither and Hither and the day is done.

A reproof to a laggard who occupying himself in small inconsequential matters is wasting the precious hours of daylight which ought to be devoted to some more inportant task in hand.

9. Santan tairu gula mĕlaka;
Pĕrĕmpuan ta' malu jantan ta' kata.
Coconut milk, curds and jaggery:
If the woman be immodest, what need be said of the man.

An apt reply to a woman who complains of forwardness on the part of a man to which in the opinion of the speaker she has laid herself open by her own behaviour.

10. Mĕntimun bongkok di balek tiang;
Ayam bĕrkokok alamat nak siang.
A bent cucumber behind the post:
When the cock crows it is the sign of dawn.

A line sometimes quoted as a signal for a lover not to delay his departure or in a meaningless context.

11. Buah sĕntul buah kĕchapi;
Kĕpala gondol di makan api.
Sĕntul and kĕchapi fruit:
A bald top consumed by fire.

A rhyming skit on a bald head.

12. Minyak sanyong-nyong tanak di bĕlanga bĕsi;
Hang nyom mai aku nyom pi.
Sanyong-nyong oil boiled in an iron pot:
Come smiling to me and I will go smiling to you.

A facetious remark put in the form of a charm for inducing a meeting between a man and a maid.

Bishop G. F. Hose.

Since the last Journal passed into the press the Straits Branch of the Royal Asiatic Society has lost its senior member, the Right Reverend George Frederick Hose, who died at Normandy near Guildford, Surrey, on March the 26th. Born on September 3rd, 1838, he became Chaplain of Malacca in 1868, Archdeacon of Singapore in 1874, and Bishop of Singapore, Labuan and Sarawak in 1881. He retired in 1908. While Archdeacon of Singapore our Branch of the Royal Asiatic Society was founded by his efforts; and he was our first President. An account of his work in the East will be found in the 54th part of the Journal.

He was one of those who chose the Branch's name: but before his death he had given approval to the change whereby we become the Malayan Branch;—a change which will take place with the first of next year, so that this Journal is the last that will appear under the familiar title. The series which it concludes may be dedicated appropriately to his memory.

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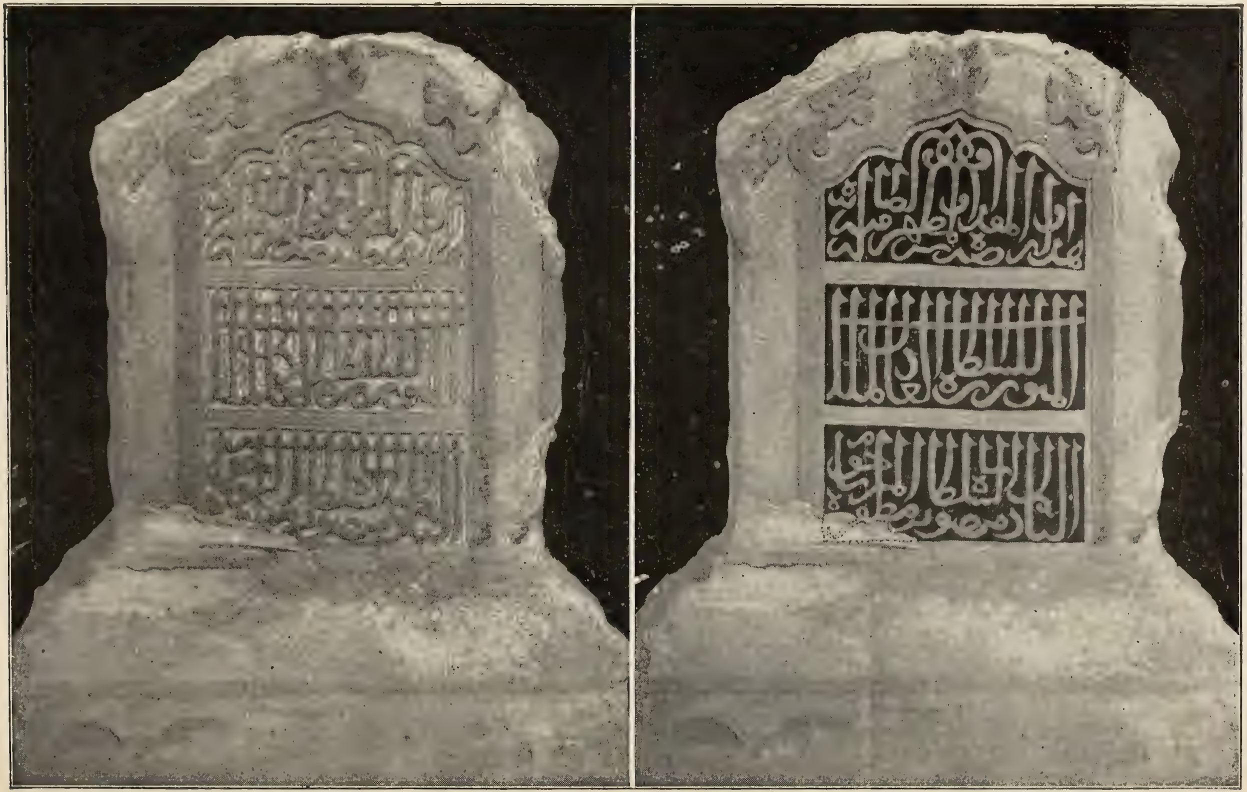


Plate I (obverse)

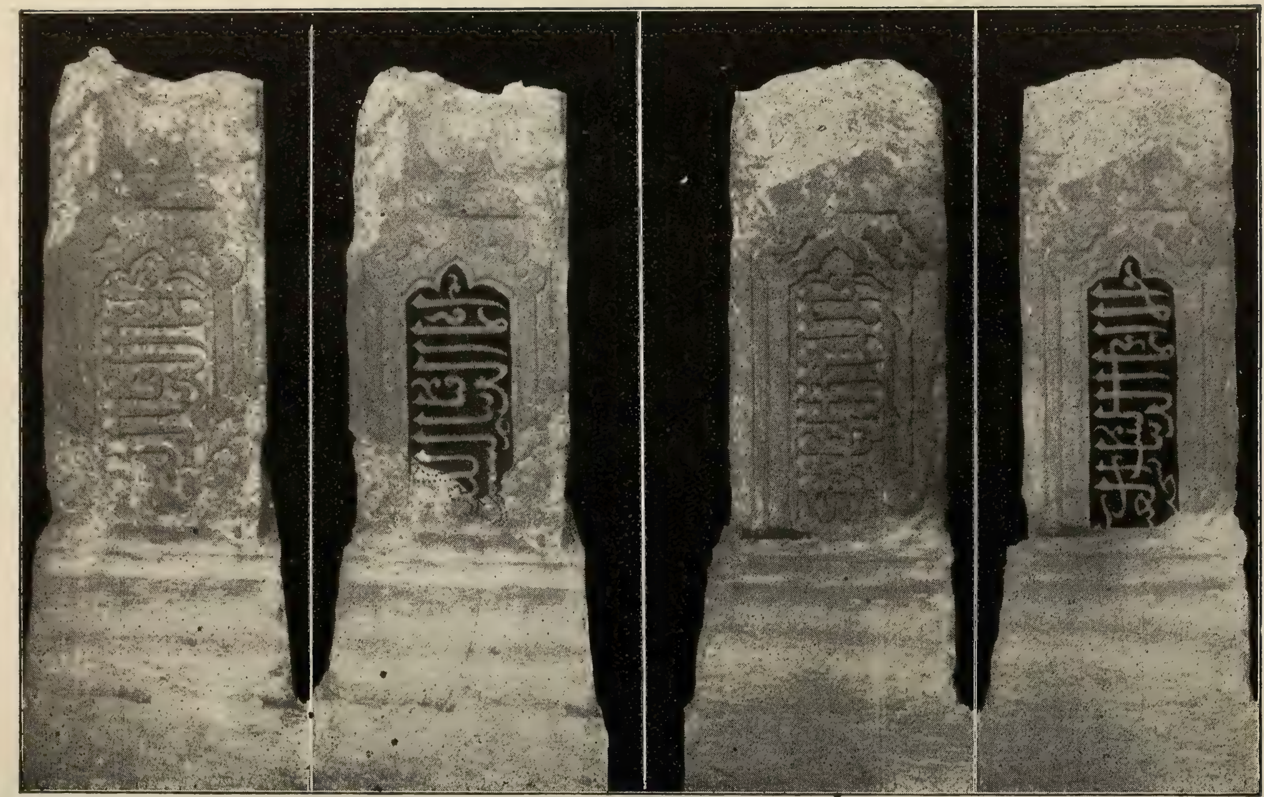


Plate III

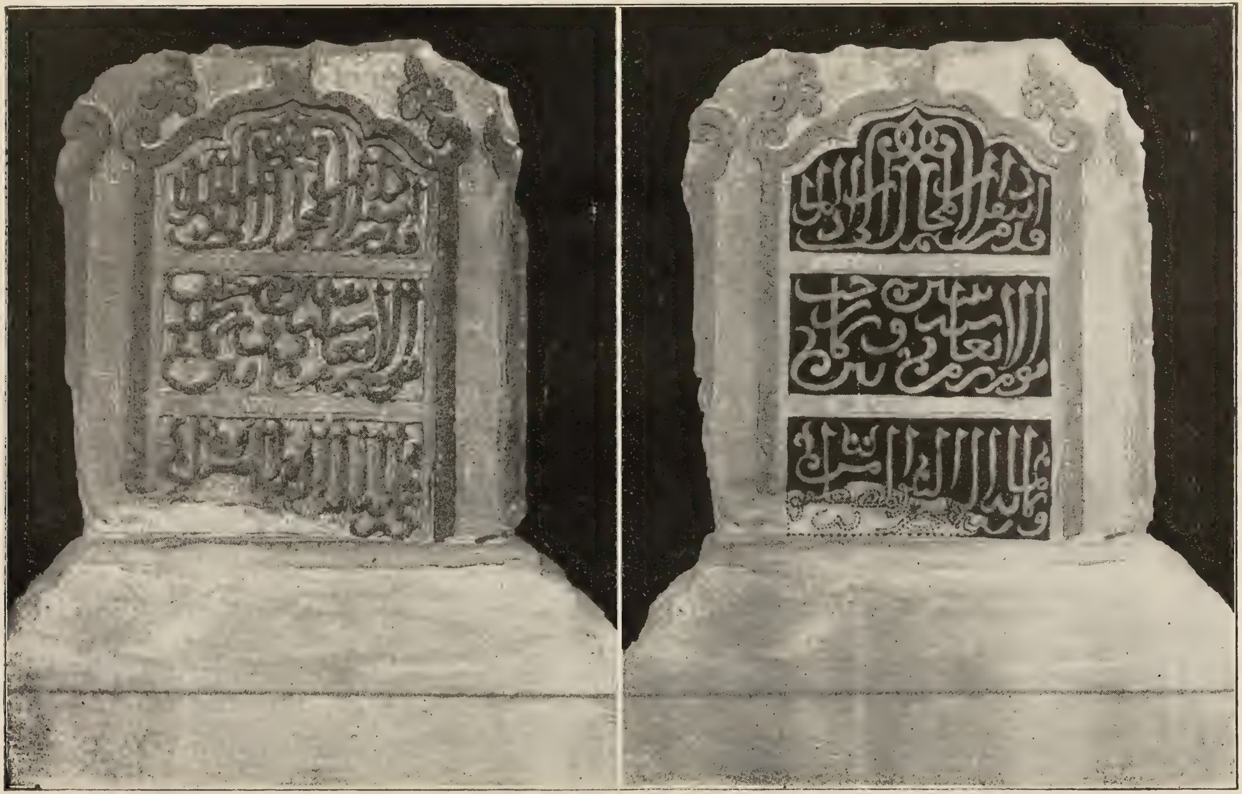
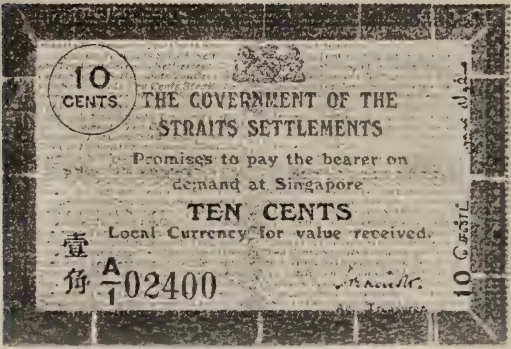


Plate II (reverse)

PLATE. I

FIG. 1.



10 CENTS.

THE GOVERNMENT OF THE STRAITS SETTLEMENTS

Promises to pay the bearer on demand at Singapore

TEN CENTS

Local Currency for value received.

壹角

A/1 02400

FIG. 2.

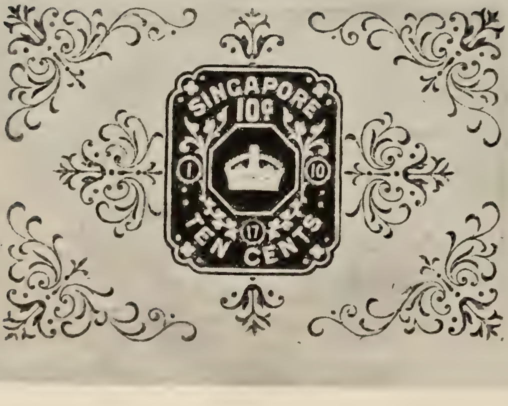
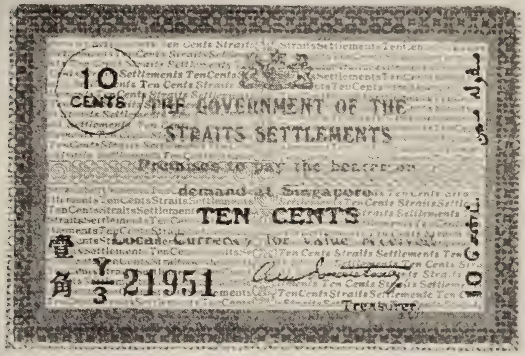

SINGAPORE
10¢
1
10
17
TEN CENTS

PLATE. II

Fig 3.



10 CENTS

THE GOVERNMENT OF THE
STRAITS SETTLEMENTS

Promises to pay the bearer on
demand at Singapore

TEN CENTS

Local Currency for value received.

壹
角 $\frac{Y}{3}$ 21951

Treasurer.

Fig. 10.

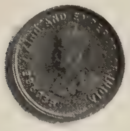


Fig. 11.

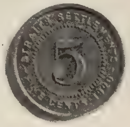
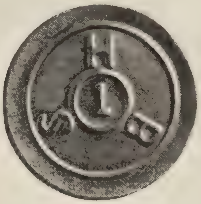

STRAITS SETTLEMENTS
5

Fig. 12.



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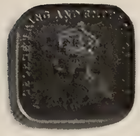


Fig 9.

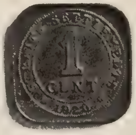


Fig. 13

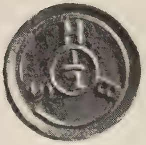


PLATE. III

FIG. 4.

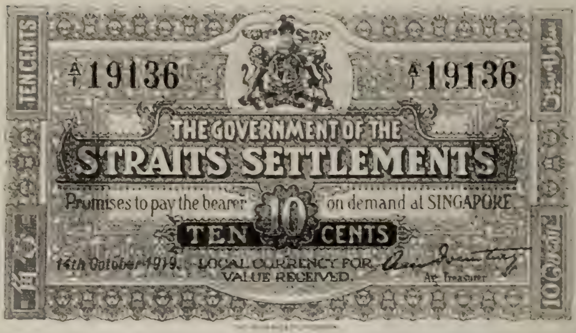

TEN CENTS
A/1 19136
A/1 19136
THE GOVERNMENT OF THE
STRAITS SETTLEMENTS
Promises to pay the bearer
10
on demand at SINGAPORE
TEN CENTS
14th October 1919.
LOCAL CURRENCY FOR
VALUE RECEIVED.
Ag. Treasurer

FIG. 5.

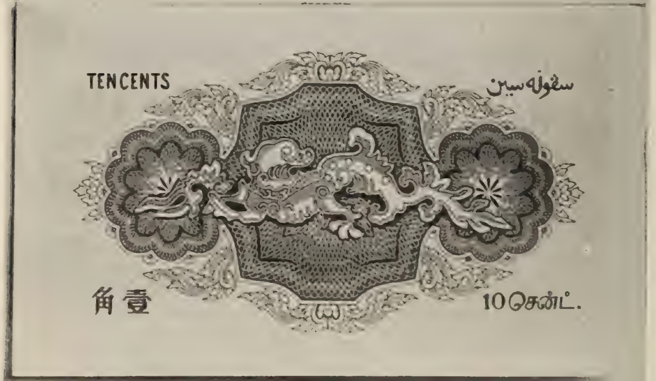
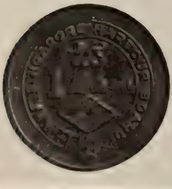

TENCENTS
سڤوله سين
角壹
10செண்ட்.

Fig. 14.



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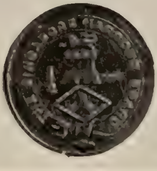


Fig. 16.

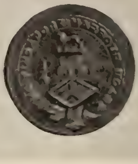
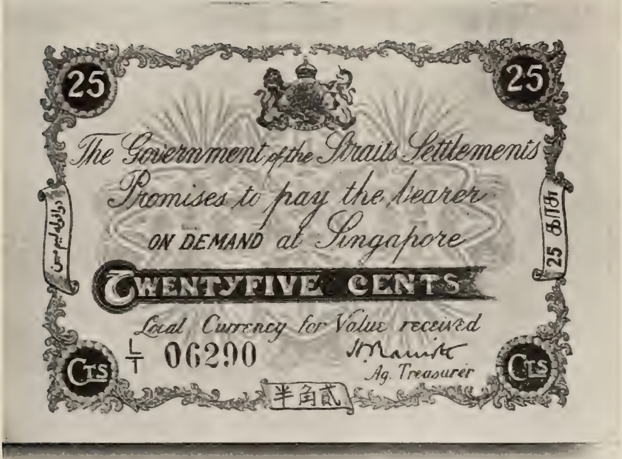


PLATE. IV.

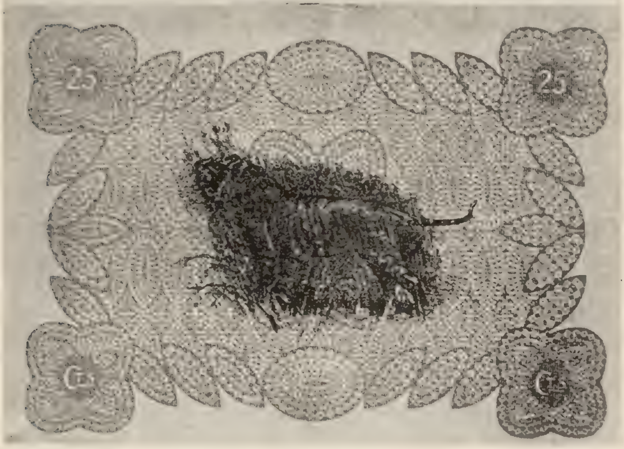
FIG. 6.



The Government of the Straits Settlements
Promises to pay the bearer
ON DEMAND at Singapore
TWENTYFIVE CENTS
Local Currency for Value received
L/T 06290
Ag. Treasurer

25
25
25 காசு
Cts
Cts
貳角半

FIG. 7.



25
25
Cts
Cts

PLATE. V.

Fig. 14

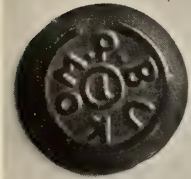
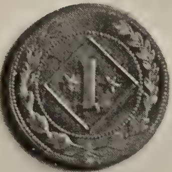


Fig. 22.



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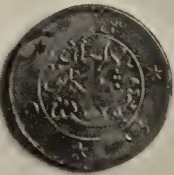

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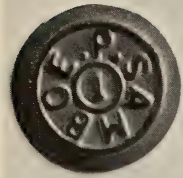

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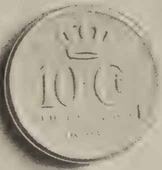

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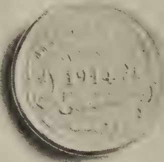


Fig. 20.

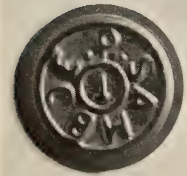
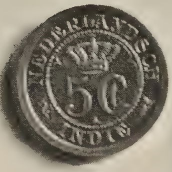


Fig. 26.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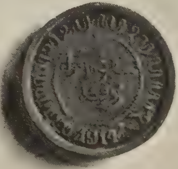
50
INDIE

Fig. 27.



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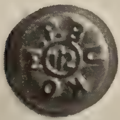

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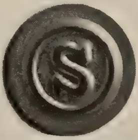

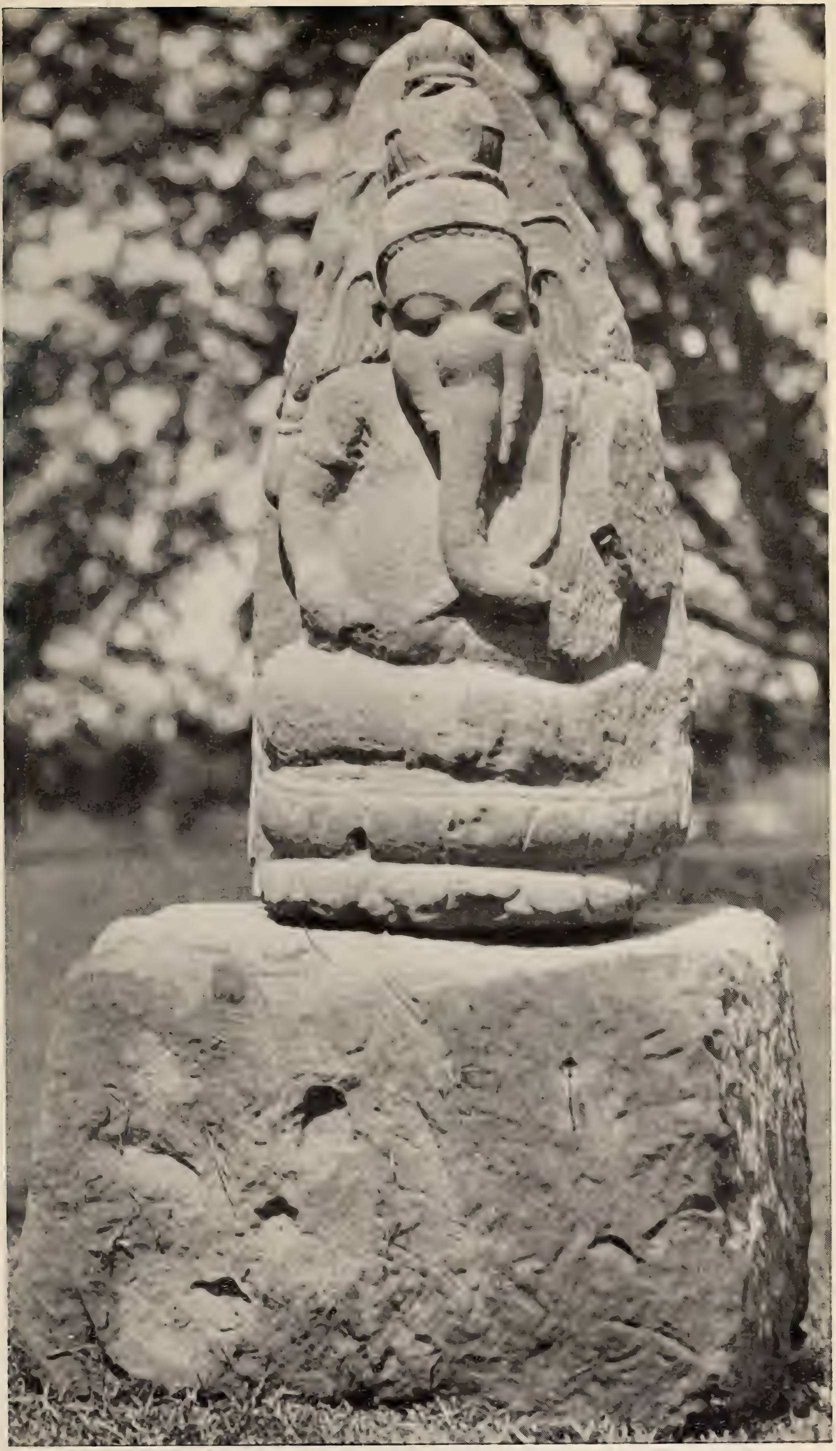

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„ „ „ (Rumi)	„	55, 1910.
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Ht. Raja Ambong (Jawi)	„	19, 1887.
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Ht. Awang Sulong sĕrta Ht. Musang Bĕrjanggut (Rumi)	„	52, 1909.
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Ht. Sĕri Rama, tĕrsalin daripada naskhah tulisan lĕbeh 300 tahun lama-nya (Jawi)	„	71, 1915.

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